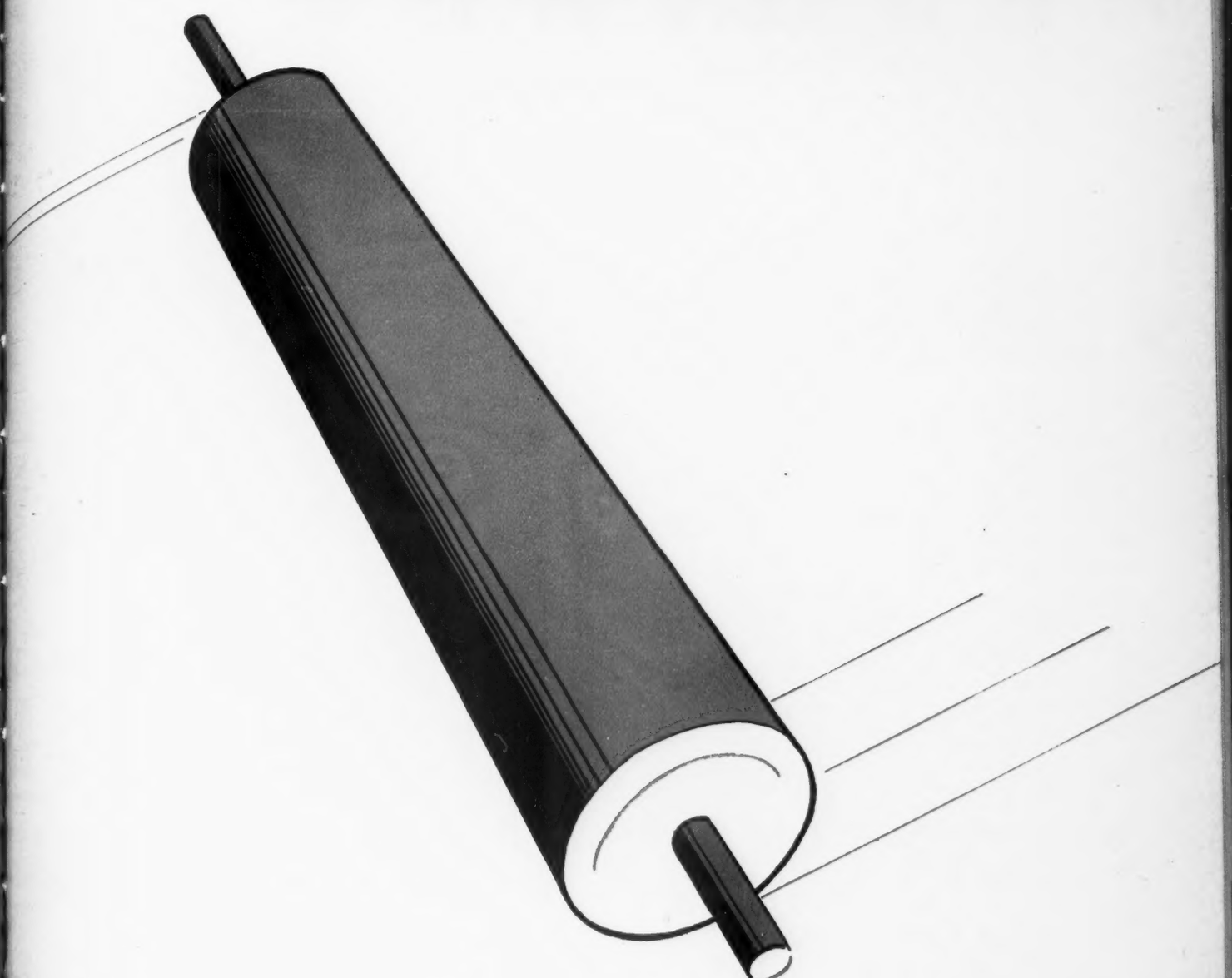
PRINTING EQUIPMENT ENGINEER



DECEMBER 1936

A TECHNICAL PUBLICATION FOR PRODUCTION AND

PUBLISHED MONTHLY IN THE INTERTYPE

Another Leading Daily Chooses

GOSS

HEAVY DUTY HIGH SPEED ANTI-FRICTION PRESS

Youngstown Vindicator
And The Youngstown Telegram
YOUNGSTOWN, OHIO, THURSDAY, NOVEMBER 19, 1936
PROVOKE BRITISH WARNI
GRAND JURISTS OPEN PROBE OF DEETRICK CASE
Call 3 Who Saw Couple Short Time Before Wife's Death
DEATH PARTS THEM FOREVER
BLOCKADE THR AROUSES EUR
Fascist General Creates New Cris
Move to Bottle Up Barcelona
All Merchant Ships
FEAR ITALIAN-GERMAN NAVIES MAY
BACK INSURGENTS IN MEDITERRA
France Takes "Steps" to Protect Shipping Int
While Soviet Ignores Fascist Thrust
Death Takes Fay; Rudy Mourns
"I Loved Her," He Cries When He Hears News
GREEN BLAMES SPLIT ON LEWIS
Tells Typo Leader Responsibility Rests on CIO
A. F. OF L. PLAGUED BY SPANISH PLEA
Loyalist Ambassador to Arrive at Meeting to
NEW RED SHIPS GUARD MADRID
Latest Type Pursuit Planes Put into Spanish War
REBEL BOMBERS MAKE NIGHT RAID

8 UNITS
2 PAIRS OF FOLDERS

The Youngstown Vindicator, recent purchaser of the Youngstown Telegram, has selected the Goss Heavy Duty High Speed Anti-Friction Press to handle its greater production requirements. Eight units and two pairs of folders will be installed. Provisions have also been made for full-color runs.

With this new Goss press in operation, the Vindicator will be able to step up its net production to 50,000 64-page papers per hour and still maintain the highest standards of quality printing. Advertisers and readers will enjoy the advantages of a better-printed paper, produced at speeds that permit more time for perfect mechanical preparation of forms, mats, and plates.

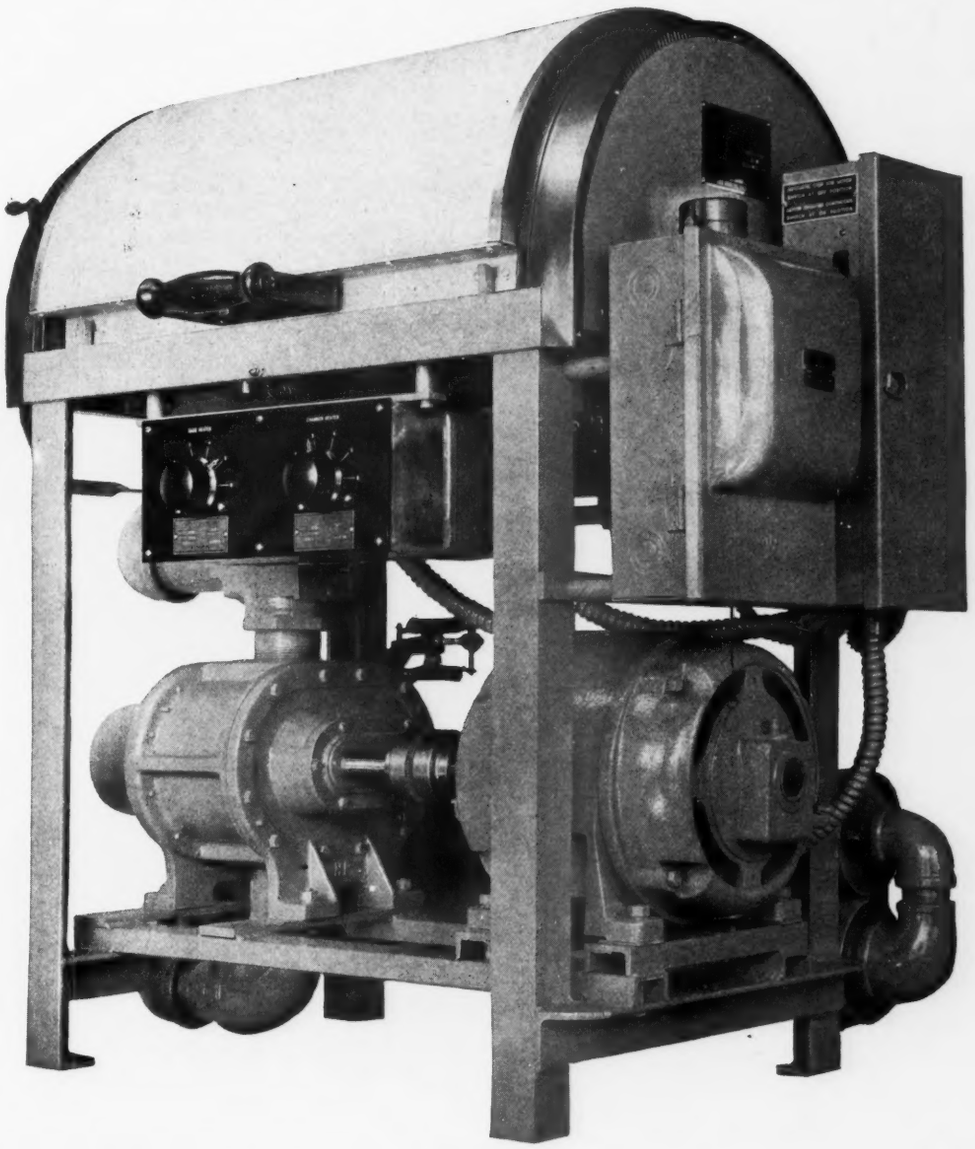
While this installation is of vital interest to those who publish, read, and advertise in the Youngstown Vindicator, its significance extends to every other publisher of a metropolitan daily. It adds further proof that the Goss High Speed Anti-Friction Press is the overwhelming choice of those who investigate thoroughly — that no other press is so far advanced in design and performance, so capable of meeting today's demands.

THE GOSS PRINTING PRESS COMPANY, PILSEN STATION, CHICAGO

New York . . . . . 220 E. Forty-Second Street
San Francisco . . . . . 707 Call Building
GOSS FOSTER Ltd. . . . . London, England

GOSS

SWING WITH THE PROGRESSIVES



The swing to **Stahi Autoformers** and the abandonment of Hobo scorchers in dry-mat routine is not just a fad, it comes from **outstanding performance** and improved product which all **Autoformers** provide. **Better casting and printing levels,** plus a saving in production time. We believe if you look around, you will see **surprising proof** of how superbly **The Autoformer** is serving over 107 **progressive newspapers** in this and foreign countries.

STAHI NEWSPAPER SUPPLY COMPANY, INC.

1020 CROCKER STREET
LOS ANGELES, CALIF.

538 So. CLARK ST.
CHICAGO, ILLINOIS

417 OREGONIAN BLDG.
PORTLAND, OREGON

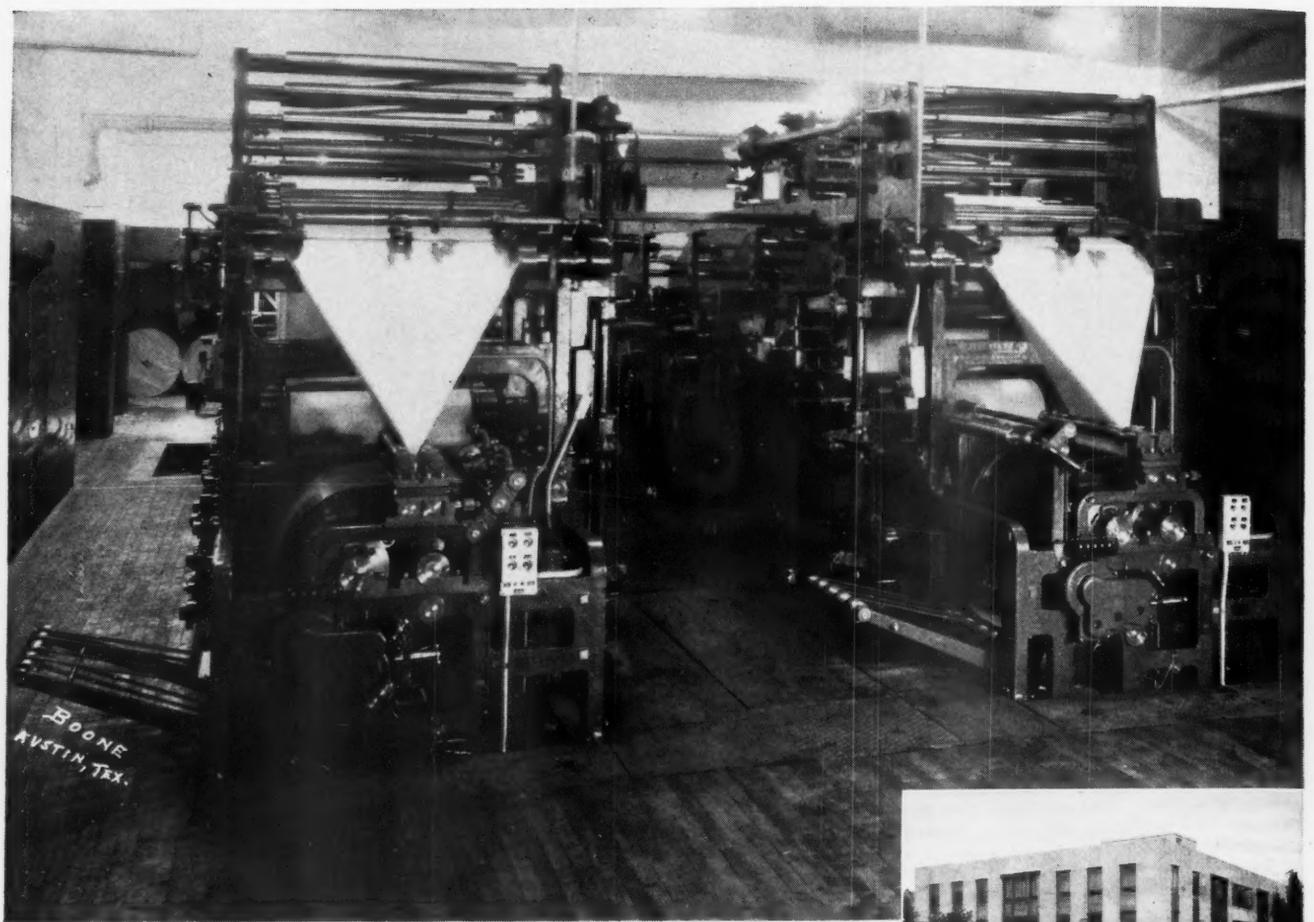
AGENCIES:

GOSS PRINTING PRESS COMPANY, Chicago, New York, San Francisco
CERTIFIED DRY MAT CORPORATION, 342 Madison Avenue, New York
DUPLEX PRINTING PRESS COMPANY, Battle Creek, Michigan
WOOD FLONG CORPORATION, Hoosick Falls, New York
BURGESS CELLULOSE COMPANY, Freeport, Illinois
R. HOE & COMPANY, New York, Boston, Chicago, San Francisco
WOOD NEWSPAPER MACHINERY CORPORATION, New York, N. Y.

Foreign Agencies:

GOSS PRINTING PRESS COMPANY of London, England
A. M. CARNEIRO & COMPANY, New York, N. Y.
TORONTO TYPE FOUNDRY COMPANY, Ltd., Toronto, Montreal, Winnipeg, Canada

"Printing Profit" Leads Another Paper to Specify Goodrich Rollers 100%



These two new Duplex Unitubular 16-page presses, recently installed by the American-Statesman, are equipped with Goodrich Printers' Rollers 100%.

New home of the American-Statesman, Austin, Texas.

BECAUSE they had proved in actual service that they produce better printing at lower cost, Goodrich Printers' Rollers were specified 100% for the two new Duplex Unitubular 16-page presses of The American-Statesman of Austin, Texas.

Several Texas papers of the Fentress Group, of which the American-Statesman is a member, are also users of Goodrich Rollers. They were specified exclusively for this new installation because of their long and profitable record.

The reasons for the nation-wide acceptance of Goodrich Rollers are many. Goodrich Rollers produce better printing the year 'round because they are unaffected by temperature changes. They reduce printing costs, too, by eliminating necessity of shut-downs for wash-up and resetting. These rollers are long lived and, even after years of service, can be reground for further use.

Better printing, lower costs, longer roller life—is it any wonder that today *more Goodrich Printers' Rollers are used in daily newspaper pressrooms of the country than all other makes combined?*

The advantages of these rollers can be verified easily by a visit to the plant of a nearby Goodrich user. A list of these users, along with complete product data, may be obtained by writing

NILES & NELSON, INC., EXCLUSIVE DISTRIBUTORS
75 West Street, New York · 400 West Madison Street, Chicago, Ill.

Goodrich *Printers'* Rollers

★ Hauser Script

A LUDLOW ORIGINAL

The Distinguished Display Typeface of the Year—

Splash in a line or two of this swank new Hauser Script and you add verve to any page. The feeling of handwork is deftly preserved without the slightest sacrifice of legibility. Black enough to provide real display, the characters are spirited enough to add life to any advertisement. And this sparkling Ludlow original blends effectively with other modern typefaces. This new typeface is available in sizes from 24 to 72 pt. Specimen sheets on request.

Bodoni Campanile

Tall, slender, and graceful, like the celebrated bell-tower for which it is named. Letterspaces effectively, affording remarkably high letter count. In sizes 18 to 72 pt.

LUDLOW

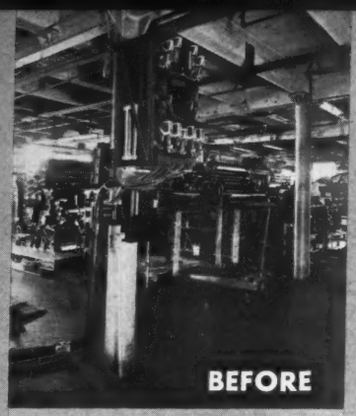
Tempo Heavy Italic

. . . permits a new and wider range of effects with a distinguished versatile sans-serif family. The size range is 12 to 72 point.

Ludlow

TYPOGRAPH COMPANY

2032 Clybourn Avenue, Chicago, Illinois



Power, distribution, and control equipment in the new layout is more efficient, more conveniently placed, is safer, and takes less space. Shown: contrast between new and old offset-press speed controllers. New control provides a wider range of control functions, and is more strongly built

The United States Printing & Lithograph Co.

32 East Nineteenth Street

New York, N.Y.

WILLIAM OTTMANN
EXECUTIVE
VICE PRESIDENT
PHONE - ALGONQUIN 4-6250

April 15th, 1936.

General Electric Co.,
General Electric Building,
570 Lexington Ave.,
New York City.

Attention: Mr. A. R. Doumaux

Gentlemen:--

We are well satisfied and much pleased with the complete change you have made in the electrical equipment of our Brooklyn factory, enabling us to use A. C. current instead of D. C.

Your installation of 198 motors, ranging from 1/4 horse power to 100 horse power, without loss of production in our plant, is in our opinion a most noteworthy performance, for which we compliment you very highly.

Furthermore, we find other advantages: Our current consumption is about 20% less, we are saving in maintenance, and have steadier power.

It seems to us that you are well entitled to receive an expression of appreciation from us in recognition of your excellent service.

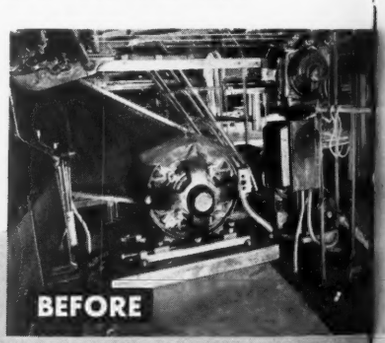
Very sincerely yours,

THE UNITED STATES PRINTING & LITHOGRAPH CO.

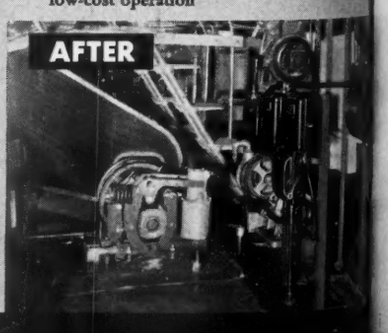
Wm. Ottmann.
Executive Vice-President.

MODERNIZATION Brings Big Savings to U.S. Printing & Lithograph Co.

G-E EQUIPMENT assures reliability and low-cost operation in the Brooklyn plant of the U. S. Printing & Lithograph Company, which this year changed over its electric equipment from d-c to a-c, replacing with new and modern electric apparatus. Installation was made by the L & P Electric Company, New York City.



The new G-E motor drive for this offset pr... takes less space—even including the addi... of the smooth operating G-E Thrustor brak... The motor delivers more horsepower p... pound of weight, and is designed for lon... low-cost operation



To obtain complete electric equipment for your plant, or electric equipment for any part of it, refer to the G-E office in your territory, or write General Electric, Schenectady, N. Y.

020-279A

GENERAL ELECTRIC

MONOTYPE STYMIE FAMILY

	Machine Typesetting Sizes	Hand Composition Sizes
Light, No. 190	BRAND NEW TYPES FOR EVERY JOB IS Only One Of The Many Features Of The Monotype machine. You can $1234567890 6, 8, 10 and 12 Point	THE MONOTYPE CAN solve rush-job problems 14, 18, 24, 30, 36, 42, 48, 60 and 72 Point
Light Italic, No. 1901	*THE DESIRE TO USE TYPES THAT ARE IN Some Way Related To Each Other When A variety of weights are needed $1234567890* 6, 8, 10 and 12 Point	*THIS ITALIC WILL BE found more in ad work* 14, 18, 24, 30 and 36 Point
Light Condensed, No. 690	[Not made in Machine Typesetting sizes]	CONDENSED TYPE FACES ARE USED IN narrow measure where the space is limited 12, 14, 18, 24, 30, 36, 42, 48, 60 and 72 Point
Medium, No. 290	NEW TYPES ON EVERY JOB WILL CUT Your Make-ready Cost And Help You Give your customer better service $1234567890 6, 8, 10 and 12 Point	THE STYMIE FAMILY is popular with ad men 14, 18, 24, 30, 36, 42, 48, 60 and 72 Point
Medium Ital., No. 2901	*HARMONY OF TONE CAN EASILY BE Attained With This Fine Italic, And When novel effects are desired it $1234567890* 6, 8, 10 and 12 Point	*A FULL CASE IS AN asset to every printer* 14, 18, 24, 30 and 36 Point
Medium Condensed, No. 590	[Not made in Machine Typesetting sizes]	GOOD ADVERTISING IS THE LIFE of modern business. It boosts sales 14, 18, 24, 30, 36, 42, 48, 60 and 72 Point
Bold, No. 189	THE STYMIE FAMILY IS ONLY ONE Of Many Fine Type Designs Which Are now available through our $1234567890 6, 8, 10 and 12 Point	NEW TYPE COSTS less for make-ready 14, 18, 24, 30, 36, 42, 48, 60, 72 and 72H4 Point
Bold Italic, No. 1891	*ONE OF THE MOST OUTSTANDING Features Of This Type Face Is Its Pleasing weight and distinction in $1234567890* 6, 8, 10 and 12 Point	*THIS TYPE FACE IS useful in most all ads* 14, 18, 24, 30 and 36 Point
Extrabold, No. 390	**MONOTYPE NON-DISTRIBUTION IS Used In Catalog, Job And Magazine shops for composing-room $1234567890** 6, 8, 10 and 12 Point	**EXTRABOLD TYPE is fine for ad heads** 14, 18, 24, 30, 36, 42, 48, 60 and 72 Point
Extrab. Ital., No. 3901	***RULES, ORNAMENTS, SPACES AND Type Are All Cast Economically On the Monotype casters $1234567890*** 6 ,8, 10 and 12 Point	***TYPE AND RULES for fine typography*** 14, 18, 24, 30, 36, 42, 48, 60 and 72 Point
Extrabold Cond., No. 490	[Not made in Machine Typesetting sizes]	**KEEP YOUR CASES SORTED and obviate looking for sorts** 14, 18, 24, 30, 36, 42, 48, 60 and 72 Point

Specimen Sheets Showing All Sizes Sent on Request

LANSTON MONOTYPE MACHINE COMPANY

MONOTYPE BUILDING, TWENTY-FOURTH AT LOCUST STREET, PHILADELPHIA, PA.

CLINE

HIGH SPEED PASTERS

AND

AUTOMATIC TENSIONS

Used on color units of High Speed Daily Newspaper Presses and on Color Rotogravure Presses to maintain Color Register. Specify CLINE High Speed Pasters and Automatic Tensions.

CLINE ELECTRIC MFG. CO.

Main Office: 211 W. Wacker Drive, Chicago, Ill.

Western Office:
Crocker First Nat'l Bk. Bldg.
SAN FRANCISCO, CALIF.

Eastern Office:
220 East 42nd Street
NEW YORK CITY

DECEMBER, 1936
Volume 53 No. 3

PRINTING EQUIPMENT ENGINEER

Trade-Mark Registered U. S. Pat. Office

A Technical Publication for the Mechanical Executive Responsible for Printing Production, Equipment and Supplies in the Commercial, Magazine, Private Plant and Daily Newspaper Field

Established 1910

Member of Controlled Circulation Audit

Published Monthly
AT 1276 W. THIRD ST.
CLEVELAND, OHIO

Eastern Manager:
RUSS BIRCHFIELD
509 FIFTH AVE., NEW YORK, N. Y. PHONE VANDERBILT 3-5191

Western Manager:
E. P. BLOOMSTER, 232 E. ERIE ST., CHICAGO, ILL. Phone SUPerior 2444

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Published by Don Will • Edited by Mac Sinclair

Associate Editors: Ira D. Pilliard, Adam Henry Reiser

HOW MATRIX CONTRAST

saves money

Black and White Matrix Contrast Service makes lines of matrices readable at a glance, as shown in the picture. Even when the operator does not feel that he has made an error, he usually glances at his line in the assembling elevator to see if it is full enough to cast. In this glance any visible error in the line is caught, immediately, and is corrected before the line is cast. With Black and White Contrast, a visible error "sticks out like a sore thumb" and is instantly detected.

In this way the Black and White Process prevents fully 33% of all errors. This means an actual saving of about 4% of the time of each composing machine. Figure it out . . . it means a large saving of money.

● *Please challenge our figures. Make us prove that the Black and White Process will save money for you, as it has for so many others. We can and will do this by means of surveys made in plants of about the same size as yours . . . plus our guarantee to reduce your total errors in original machine composition by at least twenty-five per cent.*

INVESTIGATE—DO IT NOW!

MATRIX CONTRAST CORPORATION • EMPIRE STATE BUILDING • NEW YORK

Sole Licensees of the Percy L. Hill Matrix Contrast Patents Nos. 1,466,437 and 1,796,023

A System for Ad Composition

By G. W. GOVIER*

In which is described equipment and method employed in Herald-Traveler *plant for handling display advertising composition in straight-line manner.*

IN OPERATING Ludlows in the plant of the *Herald-Traveler* a copy bin system is being used. Directly in front of each Ludlow machine are two 6-ft. long tables, each table carrying seven pairs of bins or fourteen compartments in all. All the bins inside the aisle are labeled, "Ludlow Copy" and all the bins on the outside aisle are labeled, "Finished Takes—Linotype, Intertype, Ludlow." Copy is routed either to the Linotypes first or to the Ludlows first at the discretion of the Ad Room Foreman. There is a large shelf under each copy bin which is available for the storage of underpinning or whatever is required in the way of recast slug lines, galleys, etc.

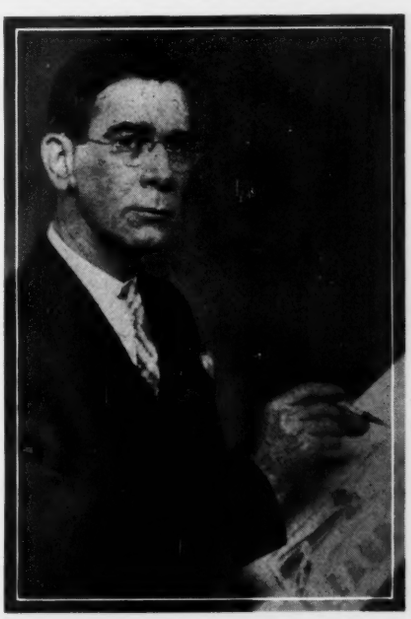
If copy goes to the Linotypes first (when these machines have finished with it and there are Ludlow lines to be set) the copy with the Linotype slugs is deposited in the bin calling for Ludlow composition. This bin is also labeled with the name of the store for whom the copy is being set. The Ludlow operators then take this copy, set and cast the Ludlow lines and deposit the whole in the bin opposite which carries the label, "Finished Takes." Thus the whole ad is automatically collated as to Linotype, Intertype, and Ludlow.

If the copy is to run out in the Ludlow Department first, it is all placed in the bins labeled, "Ludlow Copy." After the Ludlow lines have been set the copy and lines are run into other bins located at the Linotypes or Intertypes and when all of the copy is set, the whole comes back to the Ludlow and is placed in the bin carrying the store label of that particular job. Thus again, it is automatically collated. All the Ad Foreman has to do is to move it from the bin a few feet into the Ad Room where it is assembled.

By means of the bin system it is possible to concentrate all Ludlow production, or Linotype or Intertype production on one job if it is wanted. This is accomplished by putting stoppers on all copy in all bins except one, leaving this one bin exposed. Advertising calling for rush proofs is handled in this manner. When advertising copy is to take its usual course, the Ludlow men use their own discretion as to which copy they will set first with one exception—this exception being "Photo Print"† copy. The Photo Print bin is the one nearest the Ludlow machines. This copy takes precedence over everything else, inasmuch as it must go to the Art Department quickly. Where only a line or two of Ludlow is to be set, the Ludlow men, of course, set these lines first so that the ad carrying them can be gotten away from the Ludlow and into the completed stage with the loss of the least amount of time.

In the case of a very large ad as many men as are needed are assigned to work on it. The Ludlow copy bins are arranged so that no Intertype or Linotype operator need come within the Ludlow Room itself. They merely deposit their copy in the bin where it belongs and go back to their own machines for other

Automatic straight-line handling of ad composition is described interestingly by C. W. Govier.



*Mechanical Superintendent, the *Herald-Traveler*, Boston, Mass.

†See January, 1936, *Printing* EQUIPMENT *Engineer* in which Mr. Govier describes Photo Print method of ad composition.

takes. The bin operation is smooth, fast and efficient and keeps all copy and slug matter together at all times, eliminating the usual search for missing takes.

At the *Herald-Traveler* another innovation is in operation in the form of a working-height table which is located between the Ludlow machines, the drawers of which carry four series of large vertically-cast advertising figures, 84, 96, 120 and 144-point, with superior figures. These drawers are really slotted slides, divided in the center and are pulled out from either side of the table. All faces, sizes and superior figures are properly labeled. Just below the top of the table is an underpinning rack carrying the underpinning for each size. Practically all of these figures, before the Ludlows were installed, were photographed up from small sizes by the engravers. It is now only necessary to go to the figure cabinet at the Ludlows, pick up the large figures and superior figures, if any, and turn them over to the assembly man in the Ad Room. Beneath the top of this table is a shelf for recast lines. The figure drawers stand high enough from the floor to allow the storage of metal pigs beneath them. The top of the table is used for copy of a miscellaneous nature which is not handled by means of the copy bins. The table between the Ludlows is equipped with casters so that when it is necessary to reach the working parts of the Ludlow, the table is wheeled into the aisles between the copy bins, which gives the electricians or machinists ample space to perform their tasks.

Although the photograph does not clearly show it, the *Herald-Traveler* Ludlow arrangement provides room all around the Ludlows and between the Ludlow copy bins and cabinets. The men in this department work comfortably and through the arrangement of the cabinets, one man cannot at any time get in the way of another. The floor space used for the Ludlow equipment is 12 ft. by 17 ft. which is located at the center and immediately off the main ad room and in the middle of the machine room. Around it all advertising production activities revolve and there is no unnecessary walking anywhere.

In order not to disturb the bins of high-spacing material in the main ad room, the *Herald-Traveler* has had constructed in its carpenter shop underpinning racks for each assembly stone. Each of these racks carries column sizes of Ludlow underpinning, all racks being made so that the men can work from either end of them if more than one man is working at the same stone, or if but one man is working at a stone, the racks give him a left or right-hand operation.

The high-spacing material is carried beneath the ad assembly stones and does not interfere in any way with the Ludlow underpinning nor do the Ludlow underpinning racks interfere in any way with the high-spacing material. Ludlow underpinning storage racks in addition to the ones on the assembly stones are placed at four points in the Ad Room, one of these being handy to anyone in any position in the Ad Room.

The matter of Ludlow underpinning presents no problem at the *Herald-Traveler*. It is a routine matter cared for in a systematic manner as a daily job. Not more than three hours are required to stock completely the Ludlow underpinning racks. These racks then serve through the day and night to be filled again the next day, the three hours including the time consumed in casting the Ludlow underpinning.

As a further economy measure in this shop much of the Ludlow underpinning is salvaged at the break-up and resawed if necessary into smaller lengths and put into the slug storage racks. None of the pieces that can be sawed economically into smaller measures are thrown away. The sawing up of this material is part of the daily job of keeping the underpinning racks filled and takes but a few minutes per galley of slugs.

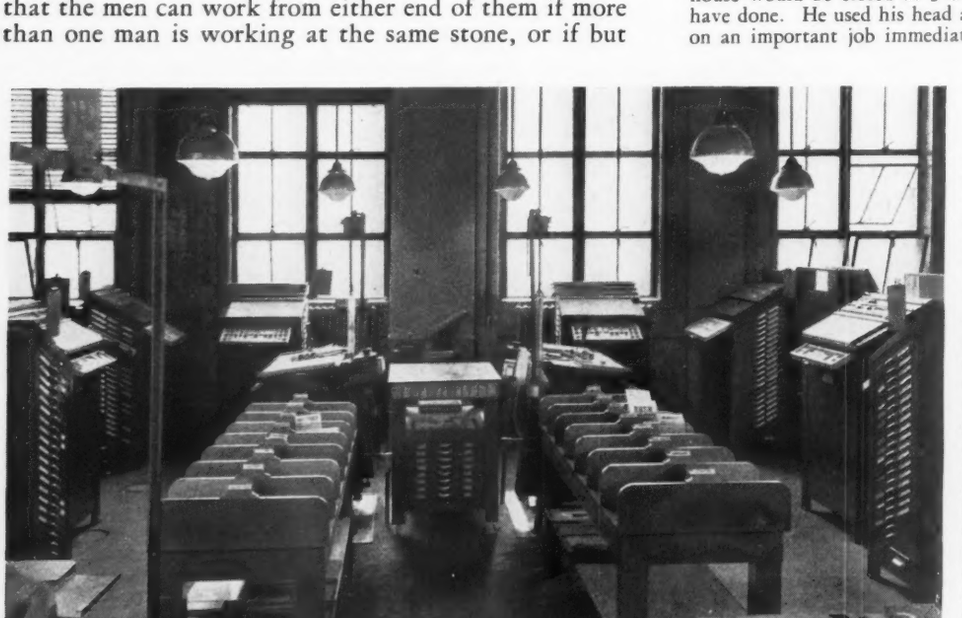
INTERTYPE QUARTER-CENTURY CLUB

An Intertype Quarter-Century Club was organized last month to celebrate the twenty-fifth anniversary of the hiring of the company's first employee. Writing in *Who's Who In Intertype*, which is published for Intertype employees and representatives throughout the world, Miss L. Wilkens, the company's first employee, tells about the early Intertype machines and matrices in the years before the World War. It is expected that twenty-two more members will be added to this company's Quarter-Century Club during 1937.

3 A. M. DELIVERY OF MATRICES

Delivery at 3 o'clock in the morning of an air express package from New York enabled Callaghan & Co., Chicago law publishers, to start immediately on an important job. The package containing special matrices, picked up from a Brooklyn manufacturer by the Railway Agency late in the afternoon, was forwarded to Chicago by air express, and delivery was effected here at 3 o'clock the next morning.

"It was vitally important that we get the matrices as soon as possible, and we directed that they be sent by air express," it was said at the publishers' office. "The air express employee did not assume that a business house would be closed at 3 o'clock in the morning, as many would have done. He used his head and as a result we were enabled to start on an important job immediately."



View of Ludlow casters, matrix cabinets, slug surfacer, bin or compartment tables and special work-top table containing drawslides in which are kept large advertising and superior figures cast in slug form available for immediate use in the ad room of the Boston Herald-Traveler.

The two long tables in the foreground are used for the reception of marked-up advertising copy for routing to Ludlows, Intertypes and Linotypes. The compartments inside the aisle are labeled "Ludlow Copy", and all the bins or compartments on the outside aisles are labeled "Finished Takes—Linotype, Intertype, Ludlow." By means of these labeled compartments and subsequent handling by operators, the display ad copy is routed to the machines in such a way that when the copy has been returned to the table bins, all of the finished composition accompanies the copy so there will be no necessity for hunting missing takes. The copy is routed to prevent retracing steps or double handling by the least number of compositors.

Cover for Stereo Pot

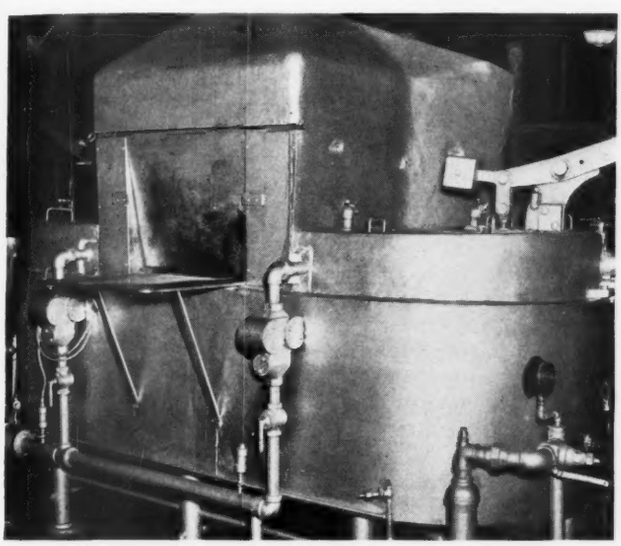
By STAFF WRITER

Fumes eliminated, fuel is saved and room temperature reduced considerably.

SOME time ago, a 10-ton Kemp gas-fired stereotype pot was installed in the plant of the Columbus (O.) *Dispatch*. F. E. Campbell is in charge of the stereotype department. A cover was devised by Mr. Campbell and was constructed for the pot after installation as shown in the illustration to eliminate heat radiation as well as to draw off any smoke or fumes arising from the surface of the metal in the pot.

The side frames are constructed of woven wire reinforced with iron rods of the same type and material as used for guards in machinery.

Retort cement was used on the bottom of the lids at either side of the hood and the tops were covered with magnesium blocks. The lids were then finished off with



View of ten-ton Kemp gas-fired stereotype metal melting pot in plant of the Columbus (O.) Dispatch. *F. E. Campbell, stereotype superintendent, devised the cover shown in this illustration for carrying away fumes from the room as well as to reduce metal drossage and fuel consumption and to lower the temperature of the air in the stereotype foundry. The cover cost approximately $250.00.*

asbestos plaster hardened with a little Portland cement. The lids may be lifted and replaced in a few minutes' time.

Fourteen-gauge iron was used for the hood and baffle plates. The hood is so arranged that it can be lifted off the pot.

The sides of the pot are covered with ordinary block asbestos which in turn is covered with a light-gauge iron. The sheet iron covering protects the asbestos from oil or the effects of a blow of any kind.

The entire outside of the pot including the cover is coated with aluminum paint.

It was not felt necessary to install a ventilating fan in the chimney duct. The hood has plenty of head room and all smoke and fumes have been eliminated.

The insulation has reduced drossage, fuel consumption and the temperature of the room many degrees. One can touch or lean against the pot without fear or being burned.

The entire cost of the cover was approximately $250.

What Is It?—IV

By ADAM HENRY REISER

The lithographic engraver creates the lithographic image—Litho ruling machine.

OUR last few articles on "What Is It?" have built the structure of lithography. Let us in the succeeding work, attempt to fill in the chinks with a sort of detailed description.

Lithographic Engraving

Engraving was one method used to obtain the lithographic design, in the early days of lithographic printing. Then, all printing was direct, as described in the fourth paragraph of the article on page 20, of the February issue, of *Printing* Equipment *Engineer*. Today, with virtually all lithography being offset printing, engraving still persists in some establishments. Engraving is used to create forms of stationery, label work and descriptive work of many kinds. In fact, just as in steel engraving, it was formerly used for illustrations. And while engraving has been considerably cut (no pun intended) in scope because of the increased uses of the camera and mechanical equipment, some of the principles still apply, as well as the actual work of engraving.

Engravers cut the design into the litho stone, a special type of stone imported from Europe. This engraving is performed with the aid of needles. These resemble pencils, with the substitution of steel for the lead. This steel shaft comes in various sizes from the fine, thin needle to square, round or oval shapes. To sharpen the needle, the wood is cut away from around the steel, the same as when sharpening a pencil. The steel is then sharpened to the engraver's liking on an oil stone. The same type of needles are used by the plate finisher when cleaning lithographic press plates.

Engravings made on stone are first laid out on a gelatine sheet and cut in with a needle. Horizontal lines represent the height of letters, spacing between lines of letters, extremes of work size and position of shields, monograms, etc. Perpendicular lines or those slanting (the degree of inclination from the perpendicular being determined by the slant of the lettering) are also scratched in at intervals across the work. Good script engravers need no further layout aids. Whole bond-body texts have been written out across a stone by the engraver just as he would in writing. Block lettering, old English and other types, are outlined on the tracing for spacing, margins and general layout. The white gelatine alone offers poor visibility without some sort of a background. A piece of green gelatine is therefore placed below the white, thus facilitating inspection as the work progresses.

When the work has been laid out to the engraver's satisfaction, the cuts are dusted with a blue or red chalk, depending upon the difficulty of the job. If the red chalk is used, the tracing is rubbed face down to a clean, white stone. For the jobs with a high degree of difficulty, the face of the stone is brushed with a blue powder while the stone is wet, thus obtaining a dark blue background. When this is dry, the blue dusted tracing is rubbed to the stone, face down, and the actual cutting-in process of engraving begins. You can immediately see the advantage of such a dark background, when the engraving with its white design shows up against the dark blue. Eye fatigue is greatly lessened and greater visibility is assured.

Alterations are made by polishing the particular

section with a piece of scotch stone so that the surface is level with the lowered portions of the cut. Over-runs are painted with a gum-nitric solution used for stone etch. When this is dried, the stone is ready for inking.

In the inking process, machine oil is smeared into the cuts, wiped off, and ink applied with a dauber. After inspection, the ink is again washed out with turpentine, the stone coated with an asphalt ground, and the shading is cut in. This is accomplished with the aid of a ruling machine. This apparatus is not to be confused with one of a like name, but far more coarse in nature. This latter is used for ruling paper.

Litho Ruling Machine

The engraver's ruling machine is a mechanical device by means of which a fine diamond attached to a thin, steel shaft may be drawn across the surface of a stone. Two parallel tracks permit sliding the diamond assembly for a distance of two or more feet. This enables the ruling machine operator to rule lines that long. A lever with an eccentric, controls the contact or off-contact position of the diamond with relation to the stone's surface. Space between lines is determined by the degree of rotation of the crank on the front of the machine. This actuates the long screw, along whose threads the entire diamond assembly travels in a direction across the tracks. The principle is similar to that employed on some photo-composers for positioning the negative or photographic medium.

In ruling, the diamond cuts through the asphaltum ground, thus exposing the stone's surface. All parts that are to be free of ruling or shading are then painted over with a fine brush using a heavy asphaltum mixture. The whole is then powdered when dry, and acetic acid applied. This performs a deep-etching action very similar to our modern deep etch. The required depth is acquired through the length of time the acid remains on the cuts. The acid is blotted off, after etching, the cuts oiled up, and the whole ground washed off with turpentine and inked up.

Present lithographic methods make use of some of this engraving. Impressions pulled from the engravings are used on the photo-composer. Skeletons, stationery forms, and other lined subjects may be cut into either zinc or aluminum, and impressions then pulled for photo-litho work. When lines are cut into metal, the plate is first etched and then smoothly gummed up. Either a diamond or an ordinary needle is then used to cut the lines into the metal through the gum film. The cuts are then greased and inked.

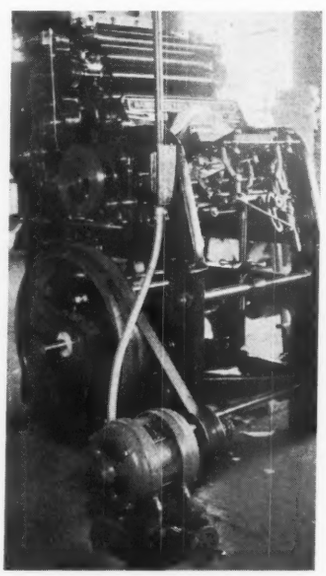
Mechanical lettering machines and the camera have contributed greatly to the displacement of the engraving method. But the engraver with his method works well in establishments where there is no camera. There, impressions through contact manipulations can be turned into negatives for use in the composer. There is also another method, used in shops where a camera is employed. This mode of operation will be dealt with in the next article.

CHAMBON MOVES

Chambon Corporation, rotary printing press manufacturers formerly located at Union City, N. J., has moved to a new three-story plant at Outwater Lane and Spruce Streets, Garfield, N. J. The new plant is especially equipped for manufacturing and has 100,000 feet of space devoted to every phase of production from press to printing plates. Organized in 1927, Chambon Corporation has developed high-speed rotary presses for multicolor printing. The company is introducing a new press—The Champlain—which is designed for package printing.

Blanker with V. S. P. Drive

IN THE accompanying illustration is shown a No. P-2 Harris-Seybold-Potter envelope blanker as installed in an envelope manufacturing plant. The blanker is designed to handle envelopes in one or more colors from 2¼ in. by 3¼ in. to 9 in. by 12 in. size. Variable speed control has been provided for this press to handle the different sizes and shapes of the blanks, weights of stock, degrees of registry needed with multi-color work, drying properties of the inks, variations in humidity and temperature and other variable factors which have a practical bearing on the speed of operation of the press.



Envelope blanker fitted with variable speed control to obtain press speeds ranging from 5000 to 15000 i.p.h.

The arrangement for the variable speed control is shown in the illustration. A 1½ h.p., 1800 r.p.m., constant speed, 3-phase motor equipped with a variable speed pulley drives the press. The motor is mounted on an adjustable base and on its shaft there are attached two cone-shaped discs. A V-belt provides the drive and this is kept in constant tension by a compression spring. The motor and base are moved backward or forward by means of the handwheel shown in the photograph and as this is done the diameter of the discs varies and consequently the diameter of the drive pulley varies. By this mechanical means the speed of the press may be varied from 5000 to 15,000 impressions per hour, and any speed between these two outside limits is practicable.

MOVES PHILADELPHIA OFFICE

The Fuchs & Lang Mfg. Company, Div. of General Printing Ink Corporation, has moved its Philadelphia branch office to 29 North Sixth St. The office is under the management of F. E. Liddington who extends an invitation to everyone to visit the new quarters.

USE THE INDEX FREELY

Keep the 1937 Reference Number at hand for use when you need information about the maker of or dealer in printing equipment and supplies. If you cannot locate the maker in the proper departmental index, just ask Printing Equipment Engineer *to assist you. State your request on one of the several Business Reply Cards (postage paid) to be found opposite page 162 of the Reference Number.*

Mechanical Men

By STAFF WRITER

Meet at Texas-Oklahoma conference to hear prominent speakers—Deputy presides

THE newspaper which hopes to maintain its position in the highly competitive field of journalism must avail itself of every possible mechanical advancement offered by science, was the advice of W. E. Wines, New York, manager of the Mechanical Department of the American Newspaper Publishers' Association, speaking at the two-day Texas-Oklahoma Mechanical Conference in Dallas, November 9 and 10.

This talk, which told of the advantages of the new equipment now being offered newspaper and other printers, set the theme for the entire Conference. Shop arrangement, short cuts to efficiency, time saving methods, were discussed in several round-table conferences.

Another speaker at the Conference was A. E. Giegengack, Washington, D. C., Public Printer for the United States, who told of the operation of the Federal Printing Department, with especial reference to equipment which makes possible the handling of business amounting to $16,500,000 annually, and all of it on rush orders.

O. M. Harper, Mechanical Superintendent, Tulsa (Okla.) World, *is secretary of the Texas-Oklahoma Mechanical Conference.*

A composing room session was led by W. J. Phillips of Oklahoma City, Superintendent of the plant of the *Oklahoman* and *Times*.

Douglas McMurtrie, Chicago, Typographic Counselor for the Ludlow Typography Company, told of composing room methods and offered suggestions in the interest of speed and efficiency.

Dr. W. T. Diefenbach, New York, Chief Chemist for the Huber Ink Company, told of laboratory tests used in determining quality of newspaper stock, at a press-room session presided over by A. T. Blease, Mechanical Superintendent of the Corpus Christi (Texas) *Caller* and *Times*.

Elmer Hodgkinson, superintendent of the stereotype department of the *Oklahoman* and *Times*, spoke on "Typehigh in Our Plant."

Leven Deputy, Chairman of the Mechanical Board, Dallas *News* and Dallas *Journal*, chairman of the conference, arranged for entertainment of the visiting printers at the Texas Centennial Exposition in Dallas. O. M. Harper, Tulsa (Okla.) *World*, was secretary of the Conference.

The spring session of the Conference will be held in Houston.

W. J. Phillips, Mechanical Superintendent, the Oklahoman *and* Times, *Oklahoma City, Okla., presided over the composing room session of the Texas-Oklahoma Mechanical Conference, held in Dallas, Texas, Nov. 9 and 10.*

Delegates attending meeting of the Texas-Oklahoma Mechanical Conference, Dallas, November 9 and 10, were as follows:

F. W. Ludtke, The Houston (Tex.) *Press*
Geo. Hoehn, Dallas (Tex.) *Dispatch*
Joe T. Wooten, Longview (Tex.) *News*
Jack Kaether, Amarillo (Tex.) *Globe-News*
Clyde Taber, Dallas (Tex.) *Times-Herald*
O. R. Coleman, Abilene (Tex.) *Reporter*
Joe Myers, Tulsa (Okla.) *Tribune*
L. Faires, Austin (Tex.) *American-Statesman*
W. F. Thompson, Austin (Tex.) *American-Statesman*
Roy N. Cline, Amarillo (Tex.) *Globe-News*
E. R. Turner, San Antonio (Tex.) *Light*
E. Mundella, Texarkana (Tex.) *Gazette*
Ben Waid, Texarkana (Tex.) *Gazette*
B. C. Blackmon, Dallas (Tex.) *Dispatch*
E. Pace, Dallas (Tex.) *Dispatch*
John W. Dobbs, Wichita Falls (Tex.) *Times-Record* and *News*
E. C. George, Houston (Tex.) *Press*
A. Burck, Houston (Tex.) *Post*
J. J. Gibbs, Houston (Tex.) *Chronicle*
F. B. Beneke, Ft. Worth (Tex.) *Star-Telegram*
Ben F. Roster, San Angelo (Tex.) *Standard-Times*
L. H. Schenck, Capper Publications, Topeka, Kans.
Walter E. Kelly, Capper Publications, Topeka, Kans.
H. L. Langwell, Houston (Tex.) *Chronicle*
Clyde Alletag, Ada (Okla.) *Evening News*
L. C. McKee, Wichita Falls (Tex.) *Times-Record and News*
Geo. Woodman, Ft. Worth (Tex.) *Star-Telegram*
G. H. Rheinlander, Dallas (Tex.) *News and Journal*
Leven T. Deputy, Dallas (Tex.) *News and Journal*
A. T. Blease, Corpus Christi (Tex.) *Caller and Times*
E. V. Drozda Houston (Tex.) *Chronicle*
Frank Dye, Ft. Worth (Tex.) *Star-Telegram*
E. W. Hatton, Dallas (Tex.) *News*
Joe Bedell, Dallas (Tex.) *Journal*
Ed Gaughan, Tulsa (Okla.) *Tribune*
H. L. Higgins, Ft. Worth (Tex.) *Press*
O. M. Harper, Tulsa (Okla.) *World*
E. L. Hodgkinson, Oklahoma City (Okla.) *Daily Oklahoman*
John A. Howes, Tulsa (Okla.) *Tribune*
B. T. Juergens, Muskogee (Okla.) *Phoenix-Democrat*
A. D. MacDiarmid, Tulsa (Okla.) *Tribune*
W. J. Phillips, Oklahoma City (Okla.) *Daily Oklahoman*
Neal Clark, Amarillo (Tex.) *Globe-News*
Walter Esry, Dallas (Tex.) *News and Journal*
G. F. Roberts, Capper Publications, Topeka, Kans.
Martin Moxley, San Antonio (Tex.) *Express and News*
H. M. Shelton, Oklahoma City (Okla.) *Daily Oklahoman*
Clyde Lyman, Oklahoma City (Okla.) *Daily Oklahoman*
Roy Durie, Waco (Tex.) *News-Tribune*
H. T. Georgs, Dallas (Tex.) *News*
Frank A. Fox, Dallas (Tex.) *News and Journal*
I. A. Lundberg, Ft. Worth (Tex.) *Star-Telegram*
Roy E. Hanys, Dallas (Tex.) *Times-Herald*

INSTALLS DUPLEX UNITUBULAR

The Compton Printing Company, Los Angeles, Calif., is installing a new 12-page Duplex Unitubular Press. The press equipment includes quick lockup on all plate cylinders, two double color cylinder units and combination half and quarter-page folder. Special features are being built into the press which have been designed particularly for Manager Carl M. Bigsby.

Two-Letter Eighteen Point Matrices

By STAFF WRITER

Attachment permits casting roman and italic lines or roman and black face lines—May be used on same machine containing standard 5-14 pt. matrices

TWO 18-pt. letter characters are now punched in the casting edge of standard 1¼ in. matrices by the Mergenthaler Linotype Company. These matrices may be used in any of the various models equipped with regular two-letter matrices (5 pt. to 14 pt.) provided certain modifications are incorporated in the machine. The new 18-pt. matrices carry a combination of roman and italic or light and bold letter characters. Other than the special auxiliary alignment position required, these matrices are distributed and assembled with conventional distributing means, standard Linotype magazines and assembling mechanism. The attachment may be used on machines equipped with the quadding and centering device but for the purposes of this description the modifications of the two-letter attachment are omitted.

The use of the 18-pt. two-letter matrices does not interfere with composition from the regular matrix equipment housed in the same machine since the new attachment provides a third alignment level for the auxiliary punching of the 18-pt. matrices.

As is well known, two 14-pt. letter characters are the largest that can be punched in the 1¼ in. matrix using the standard normal and auxiliary aligning rails in the assembling elevator, the delivery channel, the first elevator and molds having corresponding alignment rails. However, in the case of matrices bearing two 18-pt. characters the alignment position of the auxiliary character has been dropped a distance of ⅛ in. to provide room enough on the casting edge to punch two 18-pt. characters. In order to permit use of standard shape matrices bearing two 18-pt. characters in a machine in which also are used matrices bearing two characters having standard normal and auxiliary alignment levels, it was necessary to redesign or modify the alignment rails in the delivery channel and first elevator to incorporate a third alignment for the auxiliary punching position of the 18-pt. matrices. A special mold having a special auxiliary alignment rail is part of the equipment. The mold used for composition in connection with the 18-pt. two-letter matrices, can be used also for composition from the regular position of the two-letter matrices (5 pt. to 14 pt.) on bodies 10 pt. to 18 pt. inclusive.

The only additional operating changes involved in preparing the machine for

(*Continued on Page 30*)

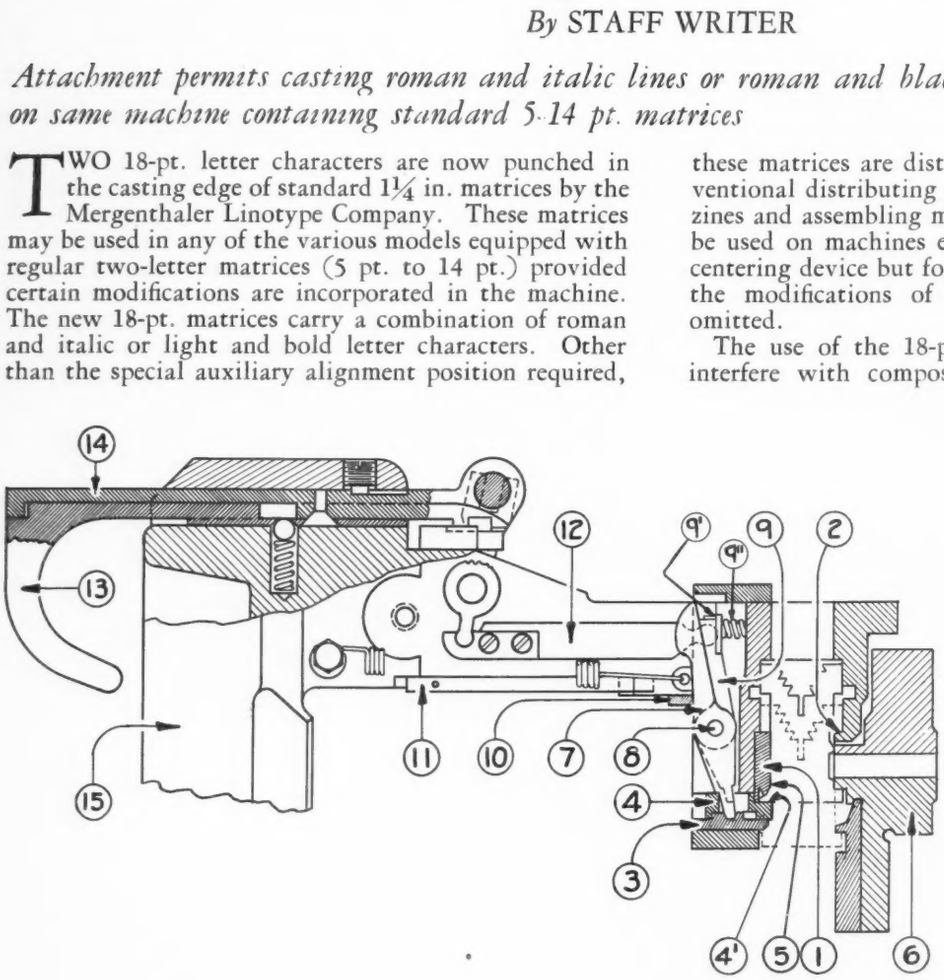


Figure 1—In this diagram is shown how two-letter 18-pt. matrices are sustained in the first elevator jaws to permit casting from either normal or auxiliary punching positions, on a Linotype fitted with the new 18-pt. two-letter attachment. Before describing these alignments, it is stated that regular two-letter (5-pt. to 14-pt.) matrices are sustained in the jaws before, during and after the casting of a slug in the regular way.

When a slug is to be cast from the normal punching position of an 18-pt. matrix line, the matrices are supported in the first elevator jaws in the usual way by adjusting bar 1 and the lip 2 of the back jaw.

To sustain a line of 18-pt. matrices in special auxiliary position, a special duplex rail 4 and 4' is brought into position by pushing inwardly a slide handle 13 mounted at the top of the first elevator slide 15. The special auxiliary rail raises the matrix line 0.125 in. higher than the regular duplex rail 3.

It will be seen that when an 18-pt. matrix line is resting upon the special auxiliary duplex rail 4 at 4', the solid portion of the matrix between the lower and upper characters is contacted and supported by the lip of the mold cap and clears the back jaw supporting rail at 2. In other words, when the mold retreats with the slug in the mold cell after the cast, the first elevator back jaw supporting lip 2 cannot function to support the matrices against any pulling power exerted by the action of the slug being withdrawn from the matrix line. To prevent matrices in this position from being pulled out of alignment when the mold moves backwardly thereby removing the bearing support of the mold cap lip from the solid portion of the matrix between the characters, the lower lugs, on the side opposite the characters of 18-pt. two-letter matrices are provided with a V-shaped notch which engages a corresponding V-shaped projection 5 on the stationary aligning rail 1 in the first elevator front jaw.

When regular two-letter matrices (5 pt. to 14 pt.) are supported on the regular duplex rail 3, there is an open space between the top of the matrix front lower front lug and the V-shaped projection 5 in the stationary aligning rail or alignment bar 1. In this case, two gravity top rails (not shown) in the first elevator front and back jaws contact the top of the matrix upper ears to prevent matrices from being forced upwardly out of horizontal alignment because of side friction with the vise jaws as the matrix line descends to casting position. The gravity top rails are locked in position automatically by two rocker arms so long as the 18-pt. attachment is not in active use.

Each time the first elevator rises to transfer position the regular duplex rail operating lever 7 retracts the regular duplex rail 3 in the usual manner so a line of regular two-letter matrices (5 pt. to 14 pt.) may be dropped from auxiliary to normal position previous to being transferred to the second elevator bar.

Likewise, a line of two-letter 18-pt. matrices resting on the special auxiliary duplex rail 4 and 4' must be dropped to normal position before being transferred to the second elevator bar at transfer position. This is accomplished as follows: When the regular duplex rail operating levers, one of which is shown at 7 is depressed by the conventional hardened steel blocks attached to the slide guide at transfer position, the levers 7 engage a wing 9' in each of the special auxiliary rail operating levers, 9, at which time both rail 3 and rail 4 are retracted to permit the matrices to drop to normal position for transfer from the first elevator to the second elevator.

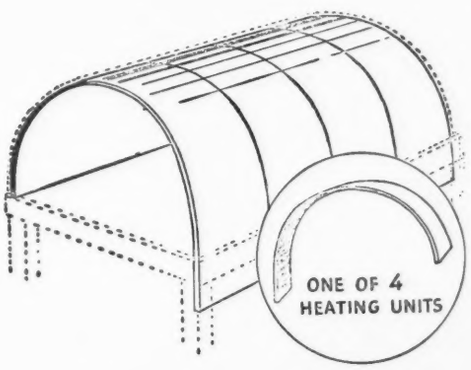
When the first elevator descends from transfer position and so long as the 18-pt. attachment is in use, the usual springs restore the regular duplex rails 3 ro normal position and the special auxiliary rail operating lever restores the auxiliary rail to operating position by means of the springs, one of which is shown at 9''.

New Printing Equipment and Supplies

Mat-A-Minute Form-O-Scorch

A special model Form-O-Scorch Forming Machine has been developed by the American Publishers Supply. It is called "Mat-A-Minute Model." The distinguishing feature of this new model is that through the application of a series of flat-type electric heating units of suitable curvature, the matrix is formed and dried by actual contact with the heat source rather than through absorption because of intervening air pockets. With this new construction, all intervening air pockets between the heat source and the matrix which is to be formed, are eliminated and full advantage is taken of all heat available by direct contact.

It is said that various tests and experiments conducted by practical stereotypers working in conjunction with



Diagrammatic illustration of new Mat-A-Minute Model Form-O-Scorch stereotype forming and drying machine. The heat source consists of four flat steel sheathed electric heating elements suitably curved for forming and drying the mat by direct contact. This construction, manufacturer states, provides maximum use of all available heat with minimum current consumption. The elements are connected to control devices so that any degree of heat may be obtained and applied automatically for definite and varying periods.

the manufacturer over a long period in newspaper plants show fine matrix preparation and increased speed of operation.

As is shown in the illustration, the new design of heat application eliminates all heating chambers and air spaces. Four flat heating units, each 6 in. wide, and shaped semi-cylindrically, compose the drying form. These heating elements are insulated to prevent heat radiation underneath. A thin steel distributing shell lies over the units with an asbestos apron covering on top. The mat to be formed and dried is placed on top of the curved asbestos cushion apron and the self-conforming scorcher cover is then pulled down into position over the mat during the forming and drying period. Heat is applied directly to the mat in this manner and since there are no intervening heating chambers, peak heat is applied instantly to the mat. Heat distribution is uniform and the temperature of the heating apparatus is not affected by the rapid forming and drying of a series of mats in succession as there is no heat loss.

Selective heat is provided by a rheostat heat control which gives an unlimited number of temperature stages. The rheostat is adjustable to the finest degree of heat to enable the stereotyper to scorch mats at any desired temperature.

The Scorchrite Timer, manufacturer states, insures an exact scorching period for each mat so that uniformity of results may be obtained, and during rush periods the control devices may be adjusted to meet all requirements. The devices also provide a means for reaching peak heat quickly from a "cold" start.

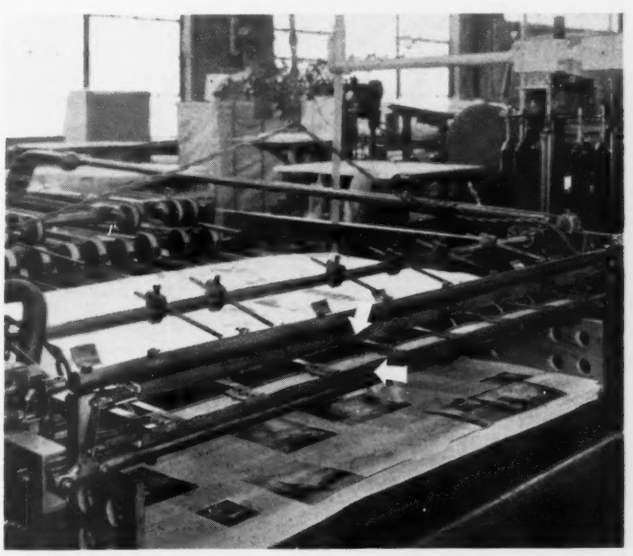
Further information may be secured by writing American Publishers Supply direct or in care of *Printing* Equipment *Engineer.*

Electric Heater and Neutralizer

Electric heating units have been developed for application to various kinds of printing presses for the purpose of setting the ink, preventing offset and for the elimination of static to permit the freshly printed sheets to be jogged easily. The electric heating and drying units are located on the delivery end of the press.

Over a several year period, several different types of these heating and drying units and methods of applying heat to the newly printed sheets have been tried experimentally. The units are now available commercially.

The electric heaters are assembled into units. The heaters employed resemble steel tubes slightly larger in diameter than a lead pencil. Two of the tubes are mounted in a bed of rockbestos with monel metal reflector. The sheath material or tube is of an alloy suitable for the temperature at which the unit is to be operated. The heater assembly is fastened to the delivery



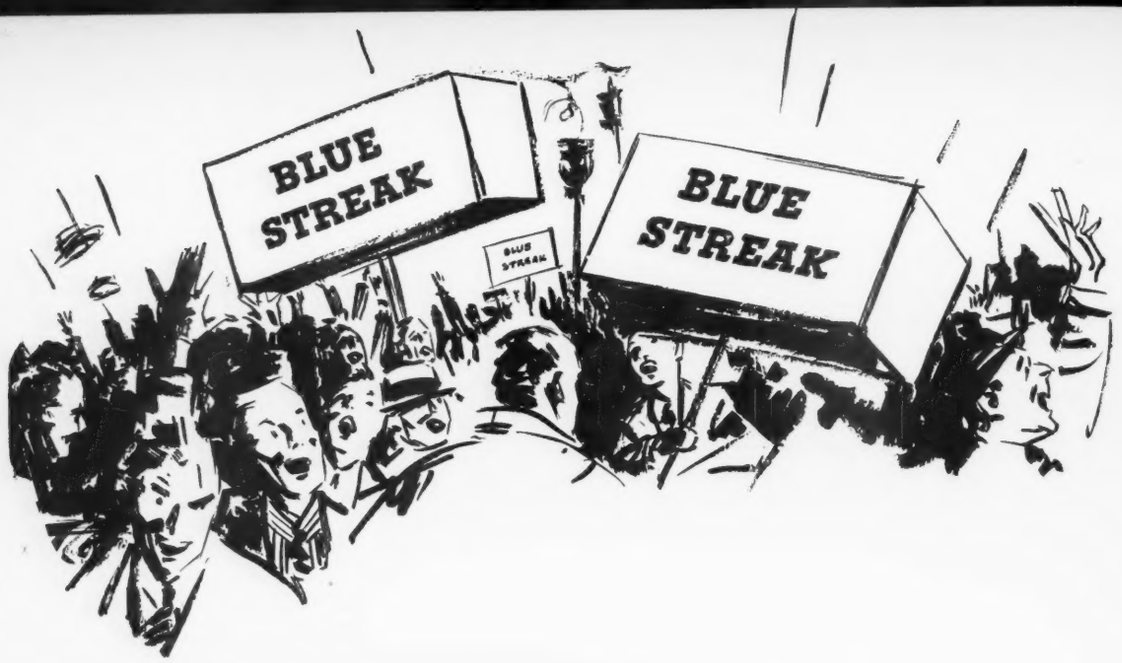
View of Miehle high-speed printing press equipped with electric heating units mounted above and below the path taken by the printed sheet as it is discharged from the delivery carriage of the press. Arrows indicate the pencil-like heaters, as wide as the delivery, each of which is mounted in a monel metal reflecting fixture. The heaters are insulated in rockbestos.

carriage of the press. Different types of presses require different sizes and wattages of heaters. The design and general construction, however, is similar in every unit. On high speed presses the units are designed to be mounted in such a way that each of the printed sheets of paper passes between two unit assembles so that both upper and lower surfaces of the sheet are subjected to the heat emitted from the units.

For lower speed presses only one group of heaters is employed. The heaters are mounted in such a way that the sheet will pass over the heaters as it is discharged.

The units have been used on two-color presses. One unit is located over the transfer cylinder as well as at the

(*Continued on Page 39*)



BLUE STREAK

THE BIG NEWS OF 1936

● The new Blue Streak line of Linotypes has featured plant enlargements and replacements in every part of the country. Orders have been coming in at a rate that has kept the factory humming.

There can be only one answer: The new Blue Streak Linotypes offer so many advantages in speed of operation, increased production, ease of maintenance, that plant executives are able to prove to the business office the practical economy of replacing obsolescent equipment with these newer, faster, more efficient Linotypes.

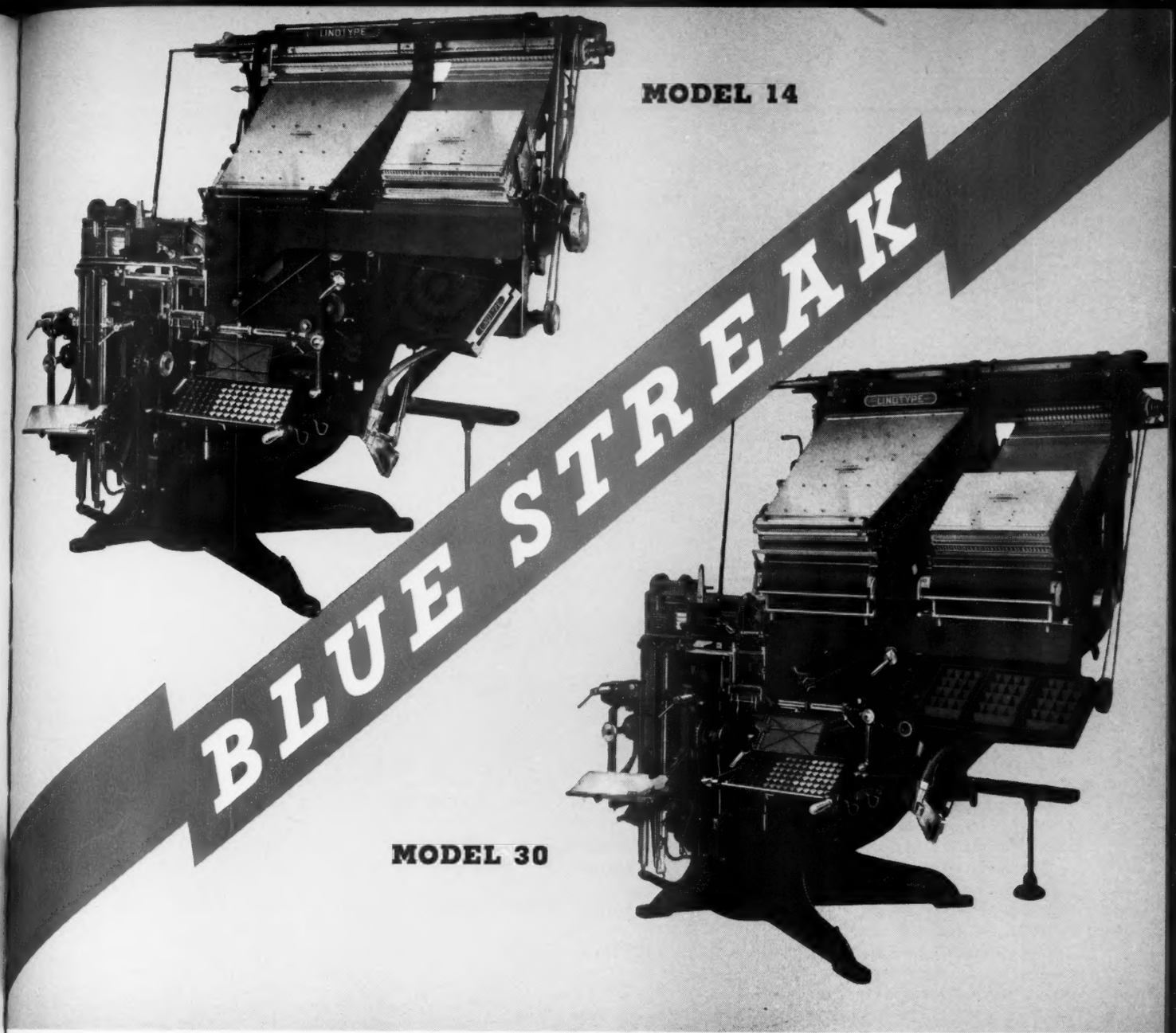
TRADE LINOTYPE MARK

A-P-L ERBAR BOLD CONDENSED, A-P-L AND LINOTYPE MEMPHIS BOLD
LINOTYPE MEMPHIS EXTRA BOLD, MEMPHIS BOLD AND BOOKMAN

Have you seen the BLUE STREAK Linotypes

Only a practical, working demonstration can show you the advantages of the 74 Mechanical Features, which include:

One-Turn Shift
Unit Control
Optic-Aid Front
Swinging Keyboard
Six-Mold Disk (Optional)
Universal Self-Quadder (Optional)
Automatic Fixed Indention
(Optional with the Self-Quadder)
Low Slug Quadding
(Optional with the Self-Quadder)
Plus these on the Mixers:
Quick Mixing Key
Simple Multiple Distributor



LINOTYPE BLUE STREAK SINGLE DISTRIBUTOR

MODEL 8 Four (or less) Main Magazines
MODEL 14 Four (or less) Main Magazines
Four (or less) Auxiliary Magazines

Models 8 and 14 can be supplied as straight text machines (90-channel), or as straight display machines (72-channel), or as "Two-in-One" machines (72-90). The Blue Streak Line also includes the Super-Display Models 27 and 28 carrying Extra-Range magazines.

LINOTYPE BLUE STREAK 4-MAGAZINE MIXERS

MODEL 29 Two, Three or Four Main Magazines
MODEL 30 Two, Three or Four Main Magazines
Two, Three or Four Auxiliary Magazines

Matrices mix from any two adjacent magazines. Models 29 and 30 will be available as straight text machines (90-channel), or as straight display machines (72-channel), or as "Two-in-One" machines (72-90).

Mergenthaler Linotype Company

BROOKLYN, NEW YORK

NEW YORK CITY · SAN FRANCISCO · CHICAGO · NEW ORLEANS · CANADIAN LINOTYPE, LIMITED, TORONTO

Representatives in the Principal Cities of the World

HOW IT'S DONE

An old-time pressroom executive once was asked: "How do you print a good paper?" and he replied: "Well, you first gotta get the ink on the plate and then you gotta get it off the plate onto the paper." He said a mouthful. How he gets it off the plate and onto the paper is strictly up to the pressman, but what he gets to take off the plate to put on the paper is out of his hands entirely.

Rubber Band Department

By IMPRESSION PETE

ONE of the penalties imposed upon newspaper composing, stereotype and pressroom executives is the heavy surge of pages delivered just previous to edition time. A wise departmental executive is supposed to provide for just such emergencies but there are occasions when the productive capacity of any one of these departments, like a rubber band, is taxed to the utmost by the editorial department. The editorial department, to be sure, does not stretch the production capacities of the mechanical departments with malicious intent, *but*, the bunching of forms by the composing room in the stereotype department *is* a condition that prevails at times irrespective of the well ordered intentions of the management.

Dry Mat Bill has just sent the last of the "banana" plates for an edition down into the pressroom. Six pages were delivered to Impression Pete in rapid succession right on the head at edition time. The composing and stereotype executives breathe freely—it was an intensive period, wasn't it? While the crews are receiving the plates, Impression Pete wonders what to do to reproduce with maximum fidelity all of the elements contained in the plates. The pressman must work with that which he receives and can give only what he gets. Newspaper presswork is strictly a reproduction process. Under skilled manipulation, the plates can be made to yield only that which is in them in the way of type legibility and pictorial beauty. These two qualities, in addition to the dominant maximum production, can be made a part of the daily newspaper only by cooperation between all departments at *all* times.

Impression Pete gets busy with the plates which were delivered in a hurry and he must now pass the papers on to the distributor in more of a hurry. No time to "fix" presses, for that must be done in advance. Blankets must be right, rollers and impressions right, the crews sober, wide-awake and on their toes because this thing of operating newspaper presses at speeds up to 50,000 i.p.h. is skilled work and no foolin' is in order at such a time. Color has been "roughed" by comparison with the pages running on the previous edition, folders set for the product, inking mechanisms changed and adjusted and if an especially hurryup edition is demanded, full rolls of paper are placed in all the reels so the first flow to the mailroom is without interruption for 10,000 papers per press at least.

Plates coming from the stereotyper are laid in position as rapidly as possible—and don't think the stereotype room is the only sufferer from "banana" forms because there is nothing more prodigal of the valuable time just preceding an edition in the pressroom than to have the plates come from the stereotype *a la banana*. So, when the makeup man pushes five or six forms against the mat roller at one time and marks up "In on time," he not only is bunching the stereotype room but he is also bunching the pressroom—and when he does that he "bunches" the entire edition with the resultant loss in sales and an accumulation of missed mails, all of which are put down against Impression Pete in the pressroom. Newspaper pressroom operation is 90% production and the rest is good printing but that small percentage is dependent absolutely upon what the pressroom gets from the composing room, the engraver and the stereotyper.

Books Received

HANDBOOK OF COLORIMETRY*

The "Handbook of Colorimetry," a new book published by the Massachusetts Institute of Technology Press really is an atlas of the world of color. Reproducing charts which represent with diagrams the characteristics of various shades and hues, the book illustrates and explains the physical measurement of color by mechanical means. The book is the result of three years' work by Arthur C. Hardy, professor of optics and photography at M.I.T., who was assisted in the work by his associates, and by others identified with industry and the National Bureau of Standards.

Speaking of the work done to produce the data contained in the book and the science of colorimetry, Karl T. Compton, president of M.I.T., states in the preface:

> The "Handbook of Colorimetry" is concerned with the basis for interpretation of the data obtained from the physical measurements of colored materials, which may be expressed either in purely physical terms or in terms of the response of the normal observer as defined by the International Commission on Illumination in 1931. It surveys the entire subject of colorimetry for the benefit of those who are approaching it for the first time and discusses the laws of color mixture as well as the means and procedure for the physical measurement of color.

A study of colorimetry has a practical significance to industries where color measurement and specification are important. A considerable portion of the data in this book has been tested, and in part, accumulated in the Research Laboratories of The International Printing Ink Corporation.

The book is intended to serve as a foundation for further studies of colorimetry in the laboratory and for wider applications of the new science in industry.

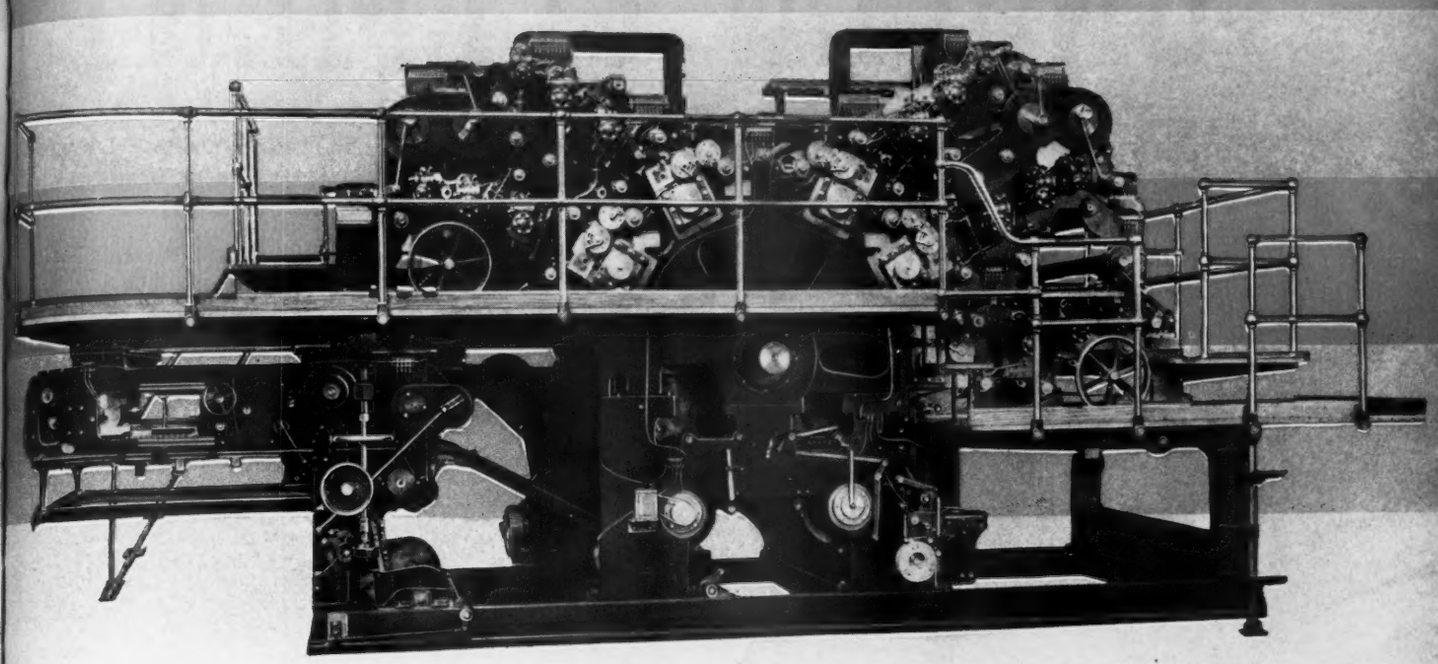
*Handbook of Colorimetry, prepared by the staff of the Color Measurement Laboratory, Massachusetts Institute of Technology under the direction of Arthur C. Hardy. Published by the Technology Press, Massachusetts Institute of Technology, Cambridge, Mass. Size, 10¼ in. by 13¼ in. Bound in gold stamped black cloth. Price, $5 per copy.

VERY TRULY YOURS

While produced under the letterpress printing method, the promotional book published by Typographic Service Company, New York, appears to have been executed by some process other than letterpress. The type matter is set in Caslon. Although printed on Antique stock,

(Continued on Page 36)

PROFITABLE



50 x 72 FIVE-COLOR PRESS

This month we illustrate a modern five-color Cottrell Press. It is used for producing four-color process work—plus an additional flat tint—five colors altogether. It is a heavy press—rigid in construction throughout—with the Cottrell standard of distribution, close register at all speeds from starting to maximum, and the latest developments for volume production of fine color printing. Two well-known national publications are using this press—both installations made since last summer.

Cottrell also offers the latest improved roll-feed magazine presses, with folders or flat delivery, delivering either sheets or folded products at remarkably high speeds. All of these presses maintain a uniformly high quality of printing that fully meets the exacting demands of present-day national advertisers.

For economical, dependable, trouble-free production of magazine and multi-color printing in volume, investigate Cottrell Rotary Presses.

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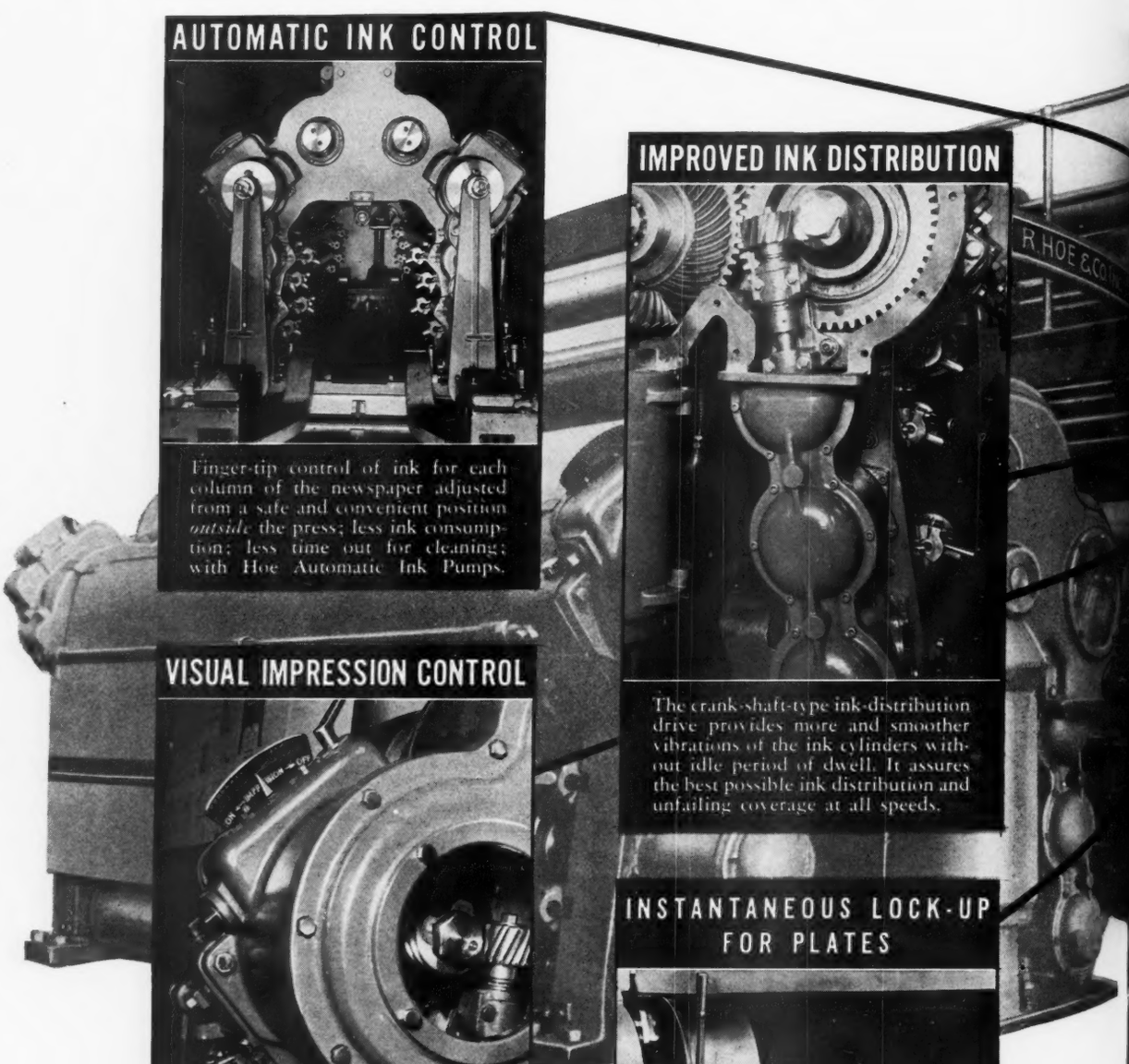
UNSEEN ELEMENTS ha



AUTOMATIC INK CONTROL

Finger-tip control of ink for each column of the newspaper adjusted from a safe and convenient position *outside* the press; less ink consumption; less time out for cleaning; with Hoe Automatic Ink Pumps.

IMPROVED INK DISTRIBUTION

The crank-shaft-type ink-distribution drive provides more and smoother vibrations of the ink cylinders without idle period of dwell. It assures the best possible ink distribution and unfailing coverage at all speeds.

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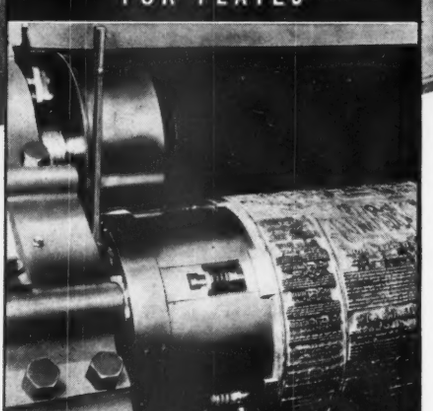
The impression is set micrometrically outside the press and visibly recorded on the gauge . . . accurate parallelism is guaranteed . . . no more guesswork . . . with Hoe Micrometer Impression Adjustment.

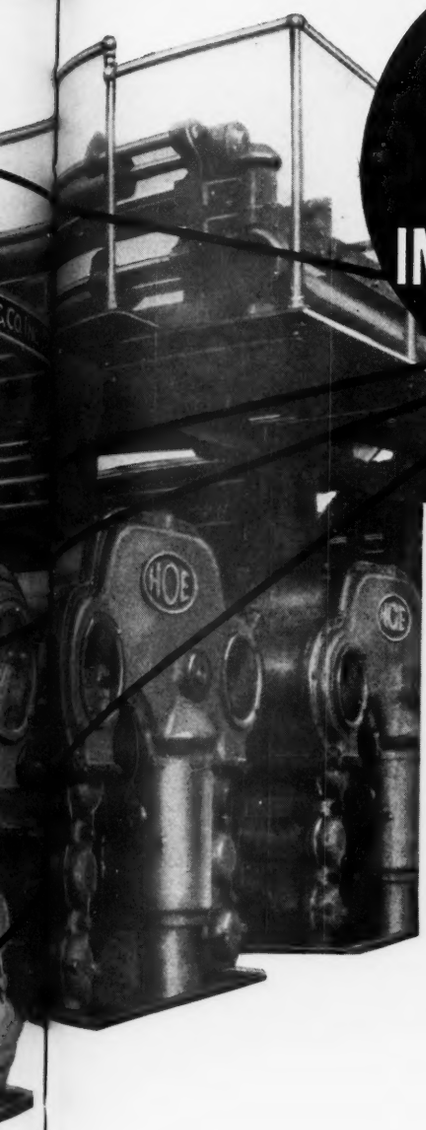
INSTANTANEOUS LOCK-UP FOR PLATES



One pull and the plate is locked — one push and it's unlocked! The fastest, safest and simplest method of plating and unplating with the Hoe Instantaneous Plate Lock-Up.

S have produced and perfected

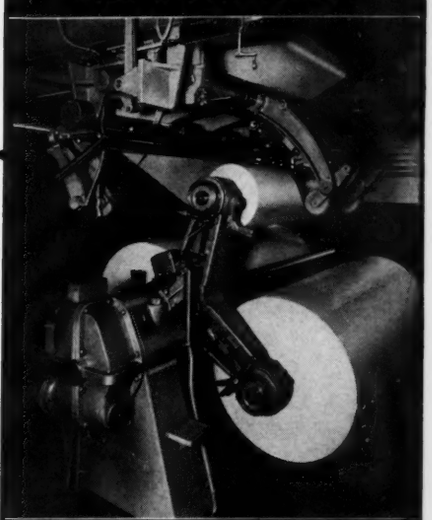
these VITAL MECHANICAL IMPROVEMENTS ★



From the extra skill in design, from the exacting care in manufacture, from the large investments for development, from the longer and broader engineering experience . . . from such "unseen elements" Hoe Presses have earned their reputation for performance, safety and reliability.

These "unseen elements" explain why Hoe Presses after generations of service are still doing excellent work. And they also explain the unrivalled progress by Hoe which has resulted in the increasingly higher speeds, the superior printing quality, and greater operating safety of modern Hoe Presses. A few of the many mechanical improvements, pioneered and perfected by Hoe, which are responsible for this record are illustrated here.

IMPROVED THREE-ARM REELS
ELECTRIC AUTOMATIC TENSIONS
FULL-SPEED PASTERS



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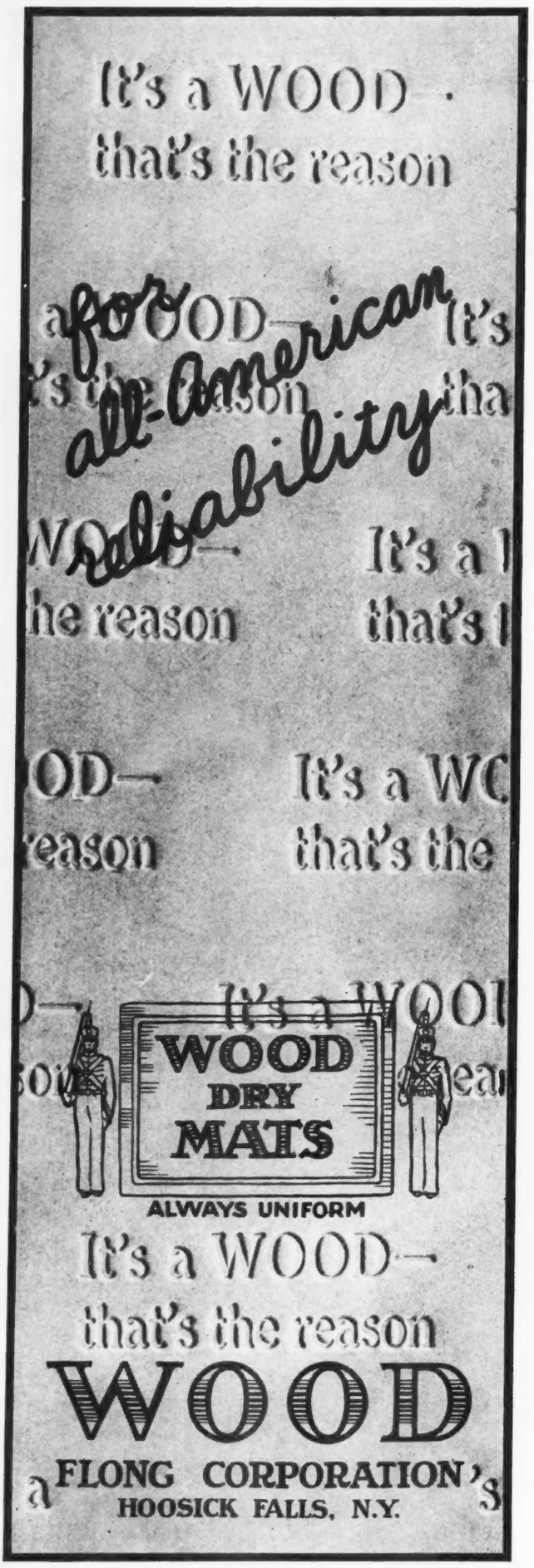


Mixing Inks for Color

By STAFF WRITER

Technique and principles related to producing colors according to fixed laws

PRINTERS frequently are called upon to match colors and whether the job is large or small it is not always possible, because of lack of time, to send the sample to be matched to the ink maker. In mixing colors we obey unchanging laws that we do not know since the laws of color, like those of perspective, were felt by the old masters of decorative and pictorial art long before science had discovered them and we all have these laws in varying degrees by instinct.

The primary colors: Yellow, red and blue, with white and black can by admixture yield many colors.

"Temperature" of Colors

Black stands for darkness, the absence of light and should not be used to deepen other colors as it can only darken a color. Black with blue in it both darkens and makes a color colder. If black is added to the primary colors the result is a dark, dirty and not a deep yellow, red and blue. Yellow is properly deepened with violet, red with green and blue with burnt sienna, if a muddy cast is to be avoided.

White stands for light without color and in pigment mixtures white can only lighten and cool. White does not add brightness as yellow does.

White and black are both cold. White lightens and black darkens but white does not brighten and black does not deepen colors.

Yellow increases brightness more than other colors and red is the color that adds warmth to a mixture. Blue is a cold color.

Color Mixing Principles

The difference in brightness and in warmth and coldness enables a color matcher to determine the colors in a mixture. If a brown is cold it contains little or no red; if it has a pale or blanched cast it contains no yellow but considerable white and has probably been mixed from violet, black and white. In a bright, warm brown are yellow, red and black and it has been mixed from orange and black. The ability to distinguish the brightness and the warmth or coldness in a mixture is the most important qualification for color matching. It is acquired by observing the color mixtures in inks by some while others qualify by a slower study of colors as they mix them.

All but the color blind may note the warmth added by red to yellow and the coldness when blue is added to yellow in a mixture. The brightening effect of yellow may be noted whether added to red to make orange or to blue to make green. The coldness of blue is plainly seen in the resulting green or purple when blue is added to yellow and red respectively.

The brightest mixture of two primary colors is obtained when both contain the minimum of the third primary color. Yellow without red in it and blue without red in it are required for a bright green. Purples are mixed from blue and red containing minimum yellow, and yellow and red with no trace of blue produce the bright orange.

Mixtures of the secondary colors yield the tertiary colors: Citron (orange and green), russet (purple and orange), olive (green and purple). The tertiary colors are really grays formed by mixtures of the three primary colors in different proportions.

(Continued on Page 28)

LEADERSHIP!

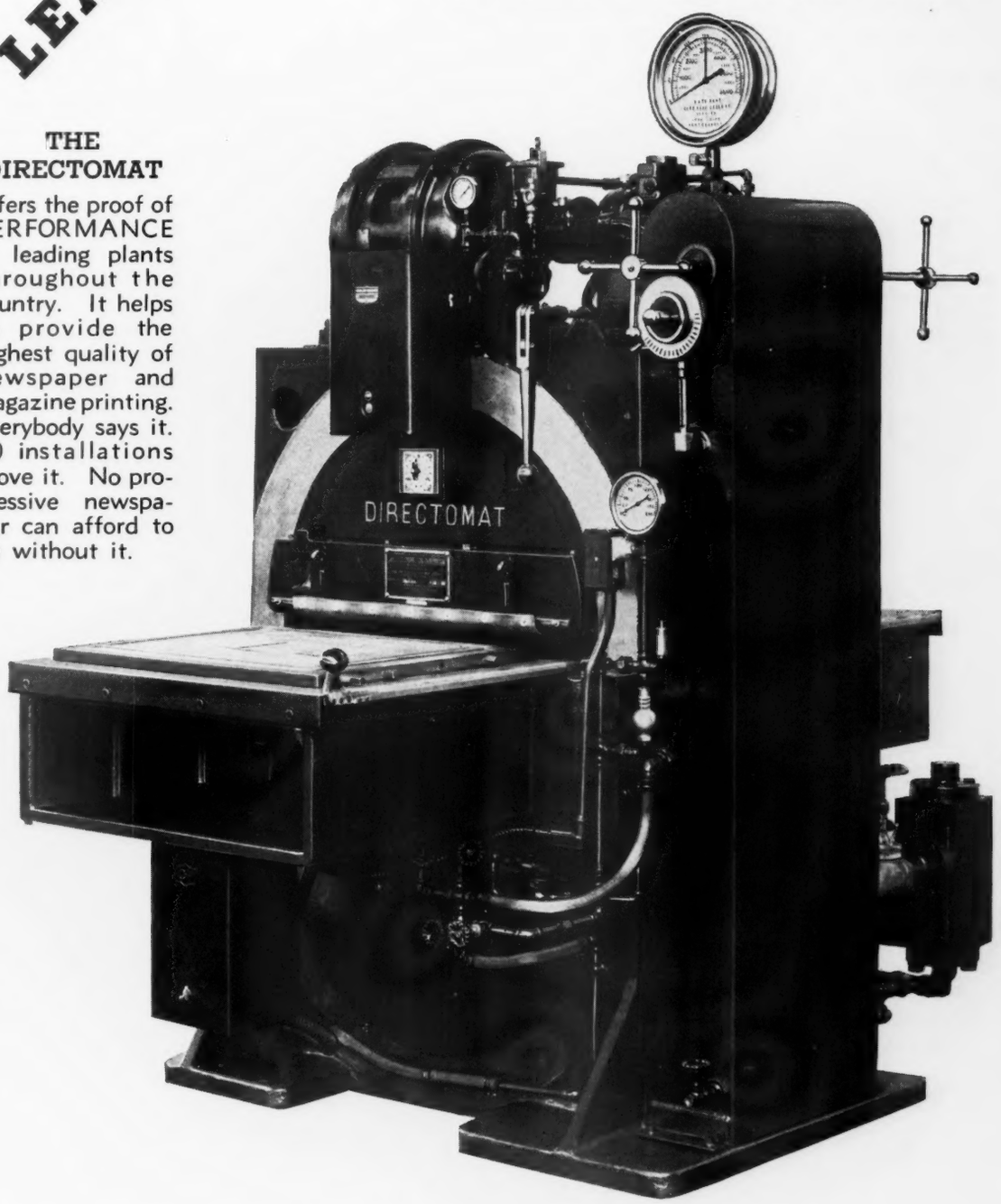
The Directomat

HYDRAULIC MATRIX PRESS

sets a new standard of speed, quality, and efficiency in matrix moulding. It eliminates guesswork and permits application of the right amount of pressure to conform with the varying characteristics of form, mat and blankets. It also eliminates the stretch of the mat, which is unavoidable with roller moulding.

THE DIRECTOMAT

offers the proof of PERFORMANCE in leading plants throughout the country. It helps to provide the highest quality of newspaper and magazine printing. Everybody says it. 40 installations prove it. No progressive newspaper can afford to be without it.



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THESE BETTER-PRINTED PRESS SHEETS SPELL SUCCESS FOR

Vaporin

A PROCESS AND A PRODUCT FOR BETTER SPEED PRINTING

Press sheets from every corner of America testify to the acceptance of Vaporin, the new process that speeds up pressroom schedules and produces a finer, cleaner printed job. The pieces shown are only a few of the Vaporin-printed exhibits sent us by printers proud of the results which they have obtained through Vaporin.

WHAT DOES "VAPORIN-PRINTED" MEAN? Vaporin has introduced into the field of printing entirely new concepts. It cannot be regarded as just an ingredient—it is a process as well as a product. In figuring the advantages of using Vaporin, many printing factors must be considered. When a printer uses Vaporin, he stops buying ink per pound. He buys better printing per dollar spent, and thinks of the final results . . . and profits.

WHY VAPORIN MAKES FOR FINER PRINTING Because of the principle of instantaneous drying, Vaporin offers several outstanding benefits to printers. First of all, it speeds up the printing process. The sheet can be backed up immediately after printing; jobs can be fed directly from the press into processing machines (for folding, cutting, etc.). No more expensive delays for drying.

Since the ink vehicle is instantly vaporized by the application of heat, there is no chance for excessive penetration, smudging or spreading. Vaporin permits printing on paper surfaces formerly used with difficulty. It makes possible clean half-tone printing, sharp legible type impression—in short, the most attractive printing.

HOW CAN VAPORIN WORK FOR YOU? Investigate Vaporin thoughtfully. Never consider it merely as ink at so much per pound. Estimate the advantages that Vaporin has already brought to customers of other printers who "keep in touch with IPI"—faster, finer printing—better looking jobs per dollar spent. Ask the IPI salesman what the use of Vaporin in your plant involves, or write us direct for further information.

THE LEGEND "VAPORIN-PRINTED" MEANS BETTER PRINTING PER DOLLAR SPENT

THE INTERNATIONAL PRINTING INK CORPORATION

ATLANTA	BUFFALO	DALLAS	LOS ANGELES	NEW ORLEANS	RICHMOND
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MATRIX PACKING FELT

A Scientifically Prepared Coating

which is non-cracking and so flexible that it permits the paper to retain its original pliancy, is now featured exclusively on Superior gummed packing felt. This gum remoistens quickly and sets instantly under heat without skidding or curling. The highest state of perfection is reached with this gum on the Superior felt paper. Spongey in texture, this felt allows steam generated in the scorching process to escape through the felt without loosening the backing. Tears easily. Shrinks with the mat and stays in place.

INSTANT RE-MOISTENING

NON-CRACKING

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QUICK SETTING

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EASY TEARING

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Write for samples

AMERICAN PUBLISHERS SUPPLY

BOX 131—WEST LYNN, MASS.

Mixing Inks for Color

(Continued from Page 24)

Mixtures of primary and secondary colors yield turquoise (blue and green), garnet (red and purple), nasturtium (red and orange), sulphur (yellow and green), saffron (yellow and orange) and purples from adding purples to blue.

Why Color Mixing Can't Be Reduced to Exact Science

Some may wonder why color mixing has not been reduced to an exact science. It is practically impossible under present conditions. There is no universal color nomenclature. Ink makers put out dissimilar colors under the same name. Various brands differ in hue and in color strength. There is an inherent difference in the strength of colors. It is true that some colors look best printed short of their full strength and opinions differ as to how much the color should be extended with white.

Color Mixing Equipment

Plate glass makes a good mixing slab. Cleanliness is necessary. Small flexible ink knives are handy for small mixtures. It is well to start with a limited assortment of colors since these may be used to mix the majority of colors.

In addition to black a mixing white and a tint base are needed. Yellow may be taken care of with lemon yellow and transparent process yellow. Important reds are Persian orange, medium red, process red and deep red. Milori, peacock and reflex are three necessary blue inks.

Yellows

Combinations of lemon yellow, process yellow and Persian orange yield all varieties of yellow and by adding white such tints as cream, buff and primrose are produced.

Orange

A fine assortment of orange inks are obtained by mixing Persian orange and medium red.

Persian orange and medium red yield a number of light red inks and deep reds are mixed from deep red, medium red and process red.

Blues and Purples

The milori, peacock and reflex blue inks yield a wide range of blue. By combining milori blue and reflex blue with deep red and process red, purple and violet are obtained.

Browns

Useful brown inks are mixed from lemon yellow, process yellow, Persian orange, medium red and combinations of these colors and black. White, green and blue are used to make cold browns.

Greens

A number of green inks are mixed from milori blue, peacock blue, lemon yellow and transparent yellow.

Mixing Technique

The simplest color mixtures are best, not only more economical in time and material, but of better appearance. Adding colors unnecessarily decreases the brilliancy of a mixture.

Generally it is better to start with the lightest color (a little of it), and add a pinch of deeper color, feeling one's way along. This is a precaution against possible waste which might be caused by starting to add a considerable quantity of the lightest ink, white for example, to a dark color. It is easier to change a light color with a dark one.

(Continued on Page 50)

Another Forward Step in Bearing Economy

"NORMA-HOFFMANN"

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PRECISION BALL BEARINGS

Designed especially to meet advanced engineering requirements, the NORMA-HOFFMANN "CARTRIDGE" Self-Sealed Bearing has the following advantages:—

At least 100% more grease capacity than any other standard self-sealed bearing.

Employs an entirely new labyrinth seal which is equally efficient in a horizontal or vertical position.

Flanged metal seal is removable to facilitate inspection, cleaning or re-greasing of the bearing.

Seals permanently maintain their efficiency without wear, friction, or power loss.

Utilizes built-in, grease-refilling plug.

No parts are exposed to the dirt hazard in preliminary handling.

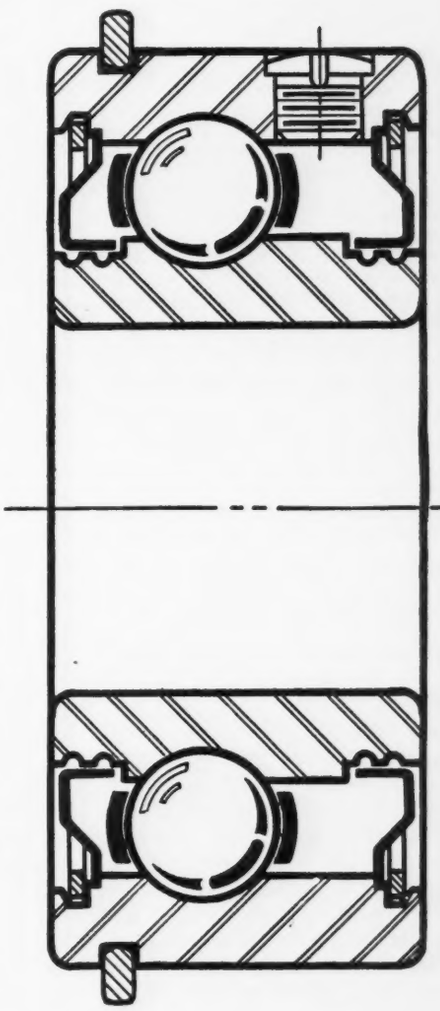
Double-row width safeguards against cocking and prevents slippage and "peening" in housing or on shaft; obviates use of locknuts.

Shortens overall length of mounting and reduces overhang of shaft.

Shoulder ring permits through bore in housing.

Reduces cost through simplifying design, eliminating protective closure parts, and speeding up assembly.

Ask for catalog F-951, containing full details and typical "Cartridge" mountings.



AVAILABLE *in* FOUR DIFFERENT SERIES

"3600" — with standard outer ring.
"43600" — with shoulder ring in outer ring.
"3600-J"— with filling plug in outer ring.
"43600-J"— with shoulder ring and filling plug in outer ring.

NORMA-HOFFMANN BEARINGS CORP'N.— STAMFORD, CONN., U. S. A.

Two-Letter Eighteen Point Matrices

(Continued from Page 16)

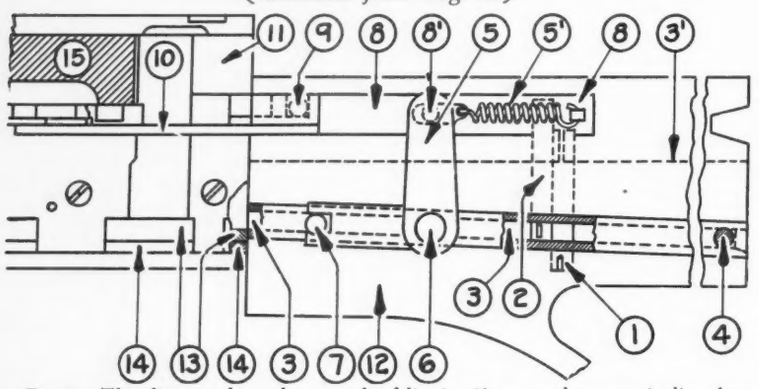


Fig. 2.—This diagram shows the means for delivering 18-pt. two-letter matrix lines from the regular normal and auxiliary rail positions of the assembling elevator to the proper casting levels in the first elevator on a Linotype equipped with the new 18-pt. two-letter attachment. Since the auxiliary punching of an 18-pt. two-letter matrix is 0.125 in. lower than the auxiliary punching of a 5-to-14-pt. matrix, it is necessary to raise the matrix upwardly 0.125 in. to a third alignment level in the first elevator. To sustain the line of matrices in that position so the mold will advance upon the lower back matrix lugs in proper relationship, a third or floating rail 13 *is superposed upon the regular duplex rail* 14 *in the first elevator front jaw* 11. *The 18-pt. mold is a special one, having the matrix auxiliary position aligning rail raised up an additional 0.125 in. In other words, the space between the constant area of the mold cell and the auxiliary aligning rail of an 18-pt. special mold is decreased 0.125 in. over that of a mold carrying the standard auxiliary aligning rib.*

In actual operation, the two-letter 18-pt. matrices are composed in the assembling elevator in the usual manner. If a slug is to be cast from the normal position (as at 1 *in this diagram) the matrices travel through the regular rails* 3 *and* 3' *and into the first elevator as is the case when a line is to be cast from the normal punching position of regular two-letter matrices. The upper normal rail is indicated by the dotted line* 3'. *When a line is to be cast from the auxiliary punching position of 18-pt. two-letter matrices (one of which is shown at* 2) *the matrices are composed on the regular auxiliary rail in the assembling elevator. While the line is being conveyed through the delivery channel it is caused to rise gradually to a sufficient height to ride the floating rail* 13 *in the first elevator jaw* 11, *by means of a hinged delivery channel front rail* 3. *The rail* 3 *is hinged at* 4. *In other words a swing rail* 3 *tilted at an angle causes the matrix line to rise gradually to the special auxiliary alignment position as the line is being conveyed by the delivery slide through the delivery channel. When the operator pushes a slide* (13, *Fig. 1) mounted at the top of the first elevator slide, a small cross-section of which is shown at* 15, *Fig. 1, the slide and coupling* 10 *are moved toward the right. The slide and coupling head are mounted underneath the horizontal portion of the first elevator slide and in front of the first elevator front jaw. A recess in the slide and coupling head engages a stud* 9 *in the swing rail locating slide* 8. *A stud* 8' *in the bell crank* 5 *pivoted on bearing* 6 *outside the delivery channel front plate* 12 *engages a stud* 7 *in the swing rail* 3. *The spring* 5' *attached to bell crank* 5 *holds the swing rail in position as governed by movement of slide and coupling head* 10 *when the operator manipulates slide* 13 *in Fig. 1.*

18-pt. composition are that the operator pushes inwardly a slide mounted at the top of the first elevator slide, which movement brings into proper position a swing rail in the delivery channel (to deliver the matrix line to the special auxiliary position in the first elevator). The movement of the slide also brings into position the auxiliary two-letter aligning rail in the first elevator front jaw.

Several safety devices have been incorporated in the design of the 18-pt. two-letter attachment for operating convenience and to obviate the occurrence of operating complications should the operator neglect to manipulate the machine in normal manner.

To prevent twisting of matrices when the operator sends in a line of 18-pt. matrices in the auxiliary position, the long or left-hand finger of the delivery slide is caused to close in on the matrix line to the nearest em measure of the line. A leaf spring in the finger takes up any space between the matrix line and the slide fingers to hold the matrices upright while being conveyed to the first elevator, yet is of sufficient flexibility to permit the matrix line to be raised to special auxiliary position by the swing rail while the line is being conveyed through the delivery channel.

As is explained in Fig. 2, the means for setting the position of the swing rail in the delivery channel is mounted in front of the first elevator front jaw and the delivery channel front plate. A recessed coupling in the swing rail operating slide in the first elevator permits the first elevator slide to travel down or up to casting and transfer positions and permits opening of the vise by the machinist. An additional recess is spaced to the left of the recess referred to above at a distance equal to the stroke of the slide (*10*, Fig. 2) to avoid damage in case either of the slides should be displaced accidentally while disengaged during the travel of the first elevator slide.

Gravity top rails in the first elevator jaws accommodate 18-pt. two-letter matrices on the auxiliary duplex rail and rest lightly upon the top of the upper matrix lugs to prevent possible twisting of the matrices during delivery of the line to the first elevator jaws, or when recasting from the same matrix line. However, when regular two-letter matrices are used in the regular auxiliary position, the gravity top rail in the first elevator front jaw is locked automatically in its downward position to prevent matrices from being forced upward out of horizontal alignment when the first elevator descends between the vise jaws.

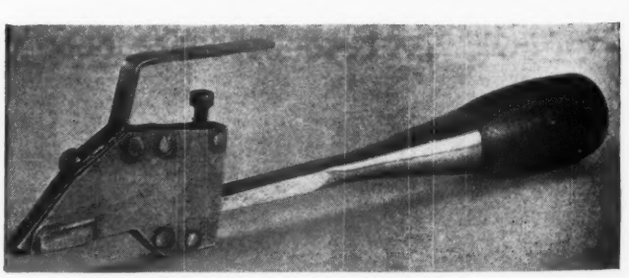
Date Line Remover

By V. O. WILLIAMS*

Among other issues, we print a pre-date edition in the plant of the *State Register*. Because of the time element involved when the edition is printed, and for other reasons, the pages of this particular edition are not made over to carry new date lines. The front page, however, is made over and dated ahead, but the other pages carry the old date.

This necessitates chipping off the old dates while the plates are on the press. Because of the design of our press (which has been in use over a long period of time) it is almost impossible to reach into the press structure to chip off the old date lines without losing a considerable amount of the chips. Before we adopted the chipping tool shown in the illustration, we found that the lost chips eventually found their way into the blankets and damaged them greatly. Because of the time and labor involved, it was impossible to remove the plates for this chipping operation, so the next best thing to do was to provide some device which would catch the chips as they were removed from the plates.

The device shown in the illustration consists of a metal chip retaining box, ¼ in. wide inside fitted to the shank of a standard ¼ in. carpenter's chisel. On



top of the box is a hinged lip held snugly against the chisel bit by a spring concealed inside the box. A tapered opening is provided between the cutting edge of the chisel bit and the spring lip to facilitate entrance of the plate chips into the chip box.

*Machinist, Springfield (Ill.) *Stat ‹Register.*

ELECTION NIGHT

The AUTOPASTERS used by the NEW YORK TIMES

spliced automatically at full speed 385 paper rolls out of 385 run on its fast Wood Presses

Making a Record of Productive Efficiency of 100%

Thus this newspaper was enabled to operate its fast Wood Presses continuously at full speed without a single slowdown for paper replenishment throughout the whole of this important night.

The Plant of *The New York Times* contains

In its FOUNDRY:	8 Wood Automatic Autoplates 8 Wood Autoshavers
In its PRESSROOM:	46 Fast Wood Steel Printing Units 14 Fast Wood Steel Folders
In its REELROOM:	46 Wood Autopasters 25 Wood Autoreels

Notice: Owing to rapidly rising costs, the prices of all manufactures of this Corporation will be increased as of January 1st, 1937. These include all units of the Autoplate series, the Autopaster and the Autoreel, and the Wood Steel Printing Unit and Steel Folder.

All orders received before the date mentioned will be filled at present prices.

WOOD NEWSPAPER MACHINERY CORPORATION

PLAINFIELD, NEW JERSEY NEW YORK OFFICE: 501 FIFTH AVE.

Plotting Production

By CHARLES H. RUTH*

Tying-in composing room operation with advertising copy flow and how accomplished

IN DISCUSSING "Coordination in the Composing Room," it is well to begin by stating that coordinators usually function in complex organizations. The functioning of the composing room of a large newspaper is not a simple operation with copy flowing into it from news departments, advertising agencies and solicitors, art studios, engraving plants and other sources. Copy is cut into small pieces to speed its progress and within a relatively few hours this vast assortment of matter must be arranged artistically and reasonably free of error and be on the street as a newspaper. Keeping track of this copy, its revisions, its progress and maintaining schedules to the minute (for some six or more editions daily) leaves little or no time for a foreman to devote to postponeable or non-pressing problems.

*Mechanical Superintendent, the Washington *Star*, Washington, D. C. Abstract of paper on "Coordination of Composing Room Activities; presented before the A.N.P.A. Mechanical Conference, Chicago, Ill., May, 1936.

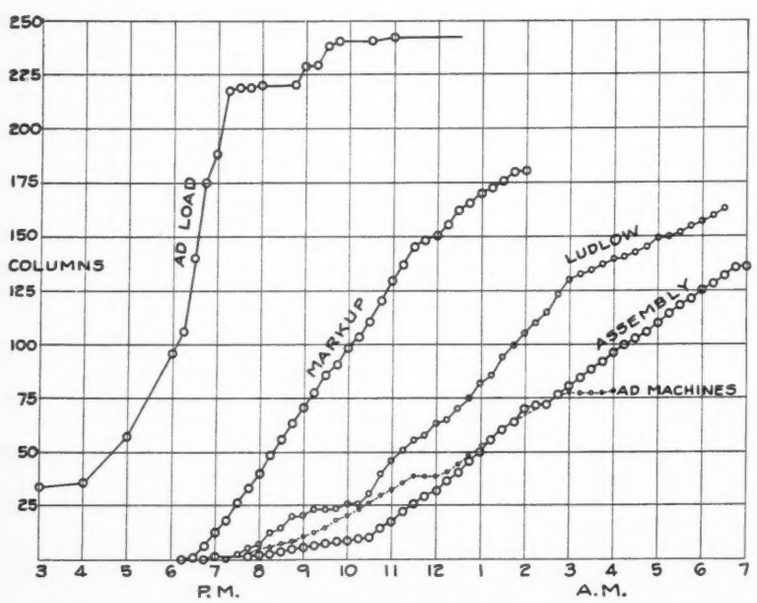
Fitting Personnel to Copy Flow

Mechanical executives will be interested particularly in that section of Charles H. Ruth's paper: "Coordination of Composing Room Activities," which deals with the "fitting" of composing room operation in relation to ad copy flow. In other words, nothing much can be done to cause advertisers to submit ad copy at times most convenient to printing plant personnel. Therefore, since personnel is a flexible element, by all means rearrange the working hours of the force to comply with the demands imposed by copy flow in order to obtain production most efficiently. Before this can be done intelligently, however, it is necessary to make an analysis of the ad copy flow and the time required for each operation in ad composition with respect to copy flow. How this was accomplished at the Washington Star *is related by Captain Ruth.*

Specific examples of composing room operation such as this have not been available for general perusal. Hence, we feel our readers will appreciate publication of this data.

Now the first and most important duty of a "coordinator" is to learn all possible about the factors he is to coordinate. Second, he should realize that the complex nature of the operation is the reason he is a coordinator and he should keep foremost in his mind the thought of *simplification*.

A vital problem in our composing room was found to be that of tying-in the force with the copy flow—both advertising and news. A chart is reproduced here which shows the flow of ad copy on a typical night and the progress of the Markup, the Ludlow, the Ad "Guts" and the Assembly of the ads.



Reproduction of chart of a typical night's operation in the ad alley of the Washington (D. C.) Star. *The* Star *(an evening paper) attacked the vital problem of coordinating composing room force operation with the copy flow. This particular chart shows the ad load for Tuesday, November 12, 1935.*

In plotting the Markup, Ludlow, Ad Machine *and* Assembly *production, the time of the men employed on these four operations (in quarter-hour periods) was obtained from time cards. The number of men employed was multiplied by the average production secured per quarter-hour for each kind of work. The average production is based on cost room figures for the week ending November 10, 1935.*

	Composed Ads For Week (Inches)	Hours For Week	Production Per Hour (Inches)
Markup	22,834	258.7	88.26
Ludlow	22,834	108.3	210.84
Ad Machines	22,834	841.2	27.14
Assembly	22,834	863.6	26.44

Chart Analysis—*While the chart discloses many conditions pertinent to our investigation, the vital points are as follows:*

1.—Markup (initial operation) did not start until 140 columns (57%) of ads were available.

2.—At 8 a. m. the Markup was behind 180 columns.

3.—The Ad Machines were producing too close to the needs of the Assembly men.

4.—To make smooth operation, the Markup men should be brought in early to parallel, as closely as possible, the ad copy flow. Following immediately behind should be the Ad Machine and Ludlow men and not until these two groups have an adequate supply of "ad guts" available should the assembly men report in force.

Night work starts with us at 6 p.m. To bring men in before this time involves overtime rates, so the night force naturally began work a little after 6 p.m. By that time the chart indicates that we had 110 columns of local display advertising copy on hand and untouched. Our markup men average about one column of markup each 15 min. By 9 p.m. they had marked up about 70 columns and by that time 225 columns were in the plant so they were 150 columns behind the advertising copy flow at 9 p.m. The markup men worked until 2 a.m. and stopped with about 65 columns untouched and to be carried over to the day force. Now no further work can be done until the markup is finished, so here we were, at 11 p.m. with the night half spent and the initial operation but half finished. Now we try to handle the markup as fast as the copy flows and usually have it finished by 10 p.m., thus leaving more time during the night for subsequent operations.

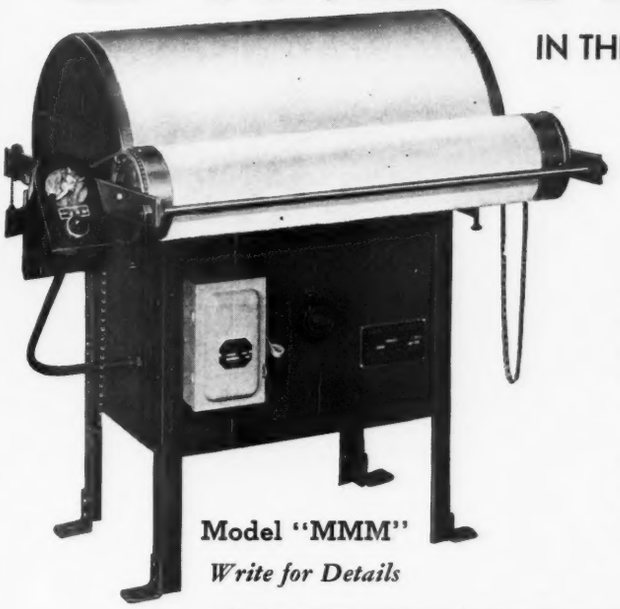
You will notice that the Ludlow, at the start, and the Ad Machines throughout were running close to the Assembly, whereas they should have been well ahead of the assembly and have sufficient type available so that those working on assembly could go ahead with their work without waiting for type in the midst of their jobs. As a result of this study we brought the markup men in earlier and in sufficient force to keep up with the flow of copy. After they made a good start and had sufficient marked copy for the Ludlow and Linotypes a force was brought in for this work. The assembly men are brought in later than before and now sufficient type is available for them to work uninterruptedly and the markup men (having completed much of

(*Continued on Page 34*)

FORM-O-SCORCH ANNOUNCES

DIRECT HEAT

IN THE "MAT-A-MINUTE" MODEL



Model "MMM"

Write for Details

DIRECT SURFACE HEAT
ADJUSTABLE HEAT CONTROL
SELF-CONFORMING CURTAIN COVER
ADJUSTABLE FORMING TENSION
AUTOMATIC TIMER

EXCLUSIVE FORM-O-SCORCH DESIGN eliminates heating chambers and applies heat direct to the matrix. Gives instant heat, constant and unaffected by preparation of many mats in rapid succession. Absolutely uniform heat and even distribution prepares mats quicker and more efficiently. Selective heat offers a thousand different stages of heat, adjustable to the finest degree permitting the exact temperature to be maintained at all times. Heat distribution is so perfectly uniform that gauge readings are identical on every square inch of the drying area. The edges and corners receive the same amount of heat as the top center.

AMERICAN PUBLISHERS SUPPLY
BOX 131—WEST LYNN, MASS.

SEVERAL SHARE IN AWARD HONORS

In recognition of its fine printing and art exhibit entered in competition with hundreds of leading industrial concerns, the Merco Nordstrom Valve Company of Pittsburgh captured First Award at the recent Fourteenth Annual Convention of the National Industrial Advertisers Association. Sessions were held in Philadelphia and the exhibits were larger in number than in any previous year. The Merco Nordstrom exhibit consisted of a series of full page quadra-colored inserts that have appeared in numerous trade journals.

The campaign was prepared by The McCarty Company, advertising counsellors, Los Angeles. The art is the work of C. W. Haines.

The inserts are from the presses of the Adcraft Press, Los Angeles and were printed under the personal supervision of General Superintendent A. B. McAllister who is a well known printing authority in Southern California and is recognized as the dean of printers. It is said that he is considered as being in the same school with John Henry Nash. Formerly, Mr. McAllister was part owner of the firm, Young & McAllister, which for many years produced fine printing in Los Angeles. Mr. McAllister became associated with the Adcraft Press about a year ago.

In the early part of November Brandtjen & Kluge, Inc., celebrated the completion of a new factory building in St. Paul, Minn., with a party for employees and friends. Approximately 500 attended the party. At one end of the room refreshments were served by four attendants working in a flower-decked serving compartment. An orchestra furnished music for dancing. The three floors in the new building are now being equipped with machinery.

For Fast, Sure Deliveries of Spare Parts and Replacements Use . . .

NATION-WIDE RAILWAY EXPRESS

You can reach practically any consignee in America, at low cost, by Railway Express and save days on deliveries. You get prompt pick-up and delivery without extra charge in all cities and principal towns. All shipments are forwarded at express train speed *and delivered promptly* with receipts to prove arrival in good condition. For extra-special speed, use Air Express—2500 miles overnight. Low, economical costs, including $50 insurance on each shipment. Additional insurance 10c per $100 valuation. C.O.D.'s a specialty. Just as fast and prompt remittances.

For prompt service and full information, phone any Railway Express office.

RAILWAY EXPRESS AGENCY INC.

NATION-WIDE RAIL-AIR SERVICE

their work early) can be reassigned to Assembly in the remainder of their shift with the assurance of a good supply of type available for them. Charts such as these are of great value to the foreman in arranging his force to parallel the load as it flows into the composing room, thus smoothing out the operation.

In the service department, the ads are recorded by column inches and as the schedule sheets, with 20 or 25 ads to a sheet, are passed on to the composing room, the night foreman can obtain a reasonably accurate estimate of his load for the night and handle his sub line to the best advantage.

EXCELLENT COLOR ADVERTISING

The recent Progress and Achievement Edition of the Canton (Ill.) *Daily Ledger* contained 88 pages. Besides the regular news sections, the issue consisted of separate historical and suburban, industrial, commerce, civic, educational and religious sections. A special illustrated section descriptive of the *Ledger* building, equipment and personnel is very interesting. J. Earle Mavity is business manager of the *Ledger*. Assisting Mr. Mavity in the mechanical departments are Lester L. Conrad, composing room foreman; Harry L. Baillie, job foreman; Carl H. Mansfield, composing machinist; Clarence Mathews, in charge of stereotype department, and James D. Finlay, pressroom foreman.

There are six color advertising pages in the edition, all excellently designed and printed with due regard for the peculiar requirements of newspaper reproduction. There is every reason to believe that the color advertising as executed in this special edition will encourage others to take similar space in many future issues of the Canton *Daily Ledger*.

An article states the special edition was printed on the *Ledger's* new Unitubular press which makes possible all page combinations from 2 to 16 at 36,000 papers per hour from one set of plates. The press is equipped with reversible cylinders to provide facilities for 16 color combinations in a 4-page run, 12 combinations in 8 pages, 8 in 12 and 4 in 16.

NEW SPLICING TAPE

A new thermoplastic tissue for splicing paper rolls has been announced by the St. Maurice Valley Paper Co., Ltd., a subsidiary of the Consolidated Paper Corporation, Ltd., Three Rivers, Wis., reads an item in a recent A.N.P.A. Mechanical Bulletin issued by Manager W. E. Wines. The tape is approximately 0.001 in. thick, is wound in reels and interleaved with paper. The tape is sold under the name of Copaco Splicing Film and is supplied in the form of reels carrying 500 ft. of film, 5/8 in. wide. The new product resembles cellophane in appearance.

Part of the announcement issued by St. Maurice Valley Company is as follows:

"In using this film for splicing, the practice is to pull off from the reel the necessary length, with its interleaf paper uppermost, and lay the strip along the prepared edge of the newsprint on the reel. The paper interleaf is then removed. It does not adhere to the film, but the slight friction involved in handling develops a static charge on the film, even under moist conditions, sufficient to cause the film to stay in place on the newsprint roll. The loose end of the paper to be spliced is then laid over the film and on iron, heated to between 325 deg. and 425 deg. F., is passed along the splice. The film fuses instantly and causes a perfect bond by absorbing into both laters of the paper. It cools instantly, so that the overlapping edge of the top layer of paper can immediately be folded right back against the splice and then torn off. The iron is once more passed along the splice to smooth down the loose fibers resulting from the tear."

Type Metal Discussion

By SAMUEL EPSTEIN*

Metallurgist says metals contract slightly on solidification

THE lead-tin-antimony alloys were used for type metals from the earliest beginnings of printing. Virtually the same alloys have remained in use to this day despite advances in metallurgy and efforts to improve and change the type metals. Evidently, therefore, the type metal alloys have decided advantages for the uses to which they are put, and these advantages might be recounted here.

Most important, is the low melting point which enables the metals to be easily melted and cast. Partly because of the low melting point the drossing† is not excessive. There is a considerable difference in density (weight and volume) between the dross and the metal so that the former readily clears itself and floats to the top. The type metals have unusually good castability, running easily when melten and filling out the mold well. It was formerly supposed that type metals expanded on solidifying, enabling them to fill out the mold better. This has now been found to be untrue, a contraction actually taking place as will be shown below. Nevertheless the contraction on solidification is relatively small and the low melting point results in very little contraction‡ taking place on cooling from the temperature of solidification to room temperature, which is an advantage. The type metals vary in hardness considerably from the softer electrotype and linotype metals to the relatively hard foundry type. Desired increases in hardness¶ can readily be obtained by increasing the tin and antimony content. The hardness of the type metals is in general sufficient to give fairly long life in printing-although frequently somewhat higher hardness and consequent longer wear would be desirable. Lastly, an advantage of the type metals is their cheapness. Lead is one of the cheapest metals; antimony is also relatively cheap, tin being the only rather expensive metal in the type metal alloys.

Contraction of Type-Metal on Solidifying

The erroneous statement is so often made that type-metals, particularly of high antimony content, expand rather than contract on solidification from the liquid state, that it is well to discuss this in detail, and to give the data showing that the type-metals really contract on solidifying as do most substances. This has been

(*Continued on Page 43*)

*Formerly Research Metallurgist, Battelle Memorial Institute, Columbus, Ohio. Abstract of paper presented before Graphic Arts Technical Conference, Washington, D. C., May, 1936.

†Dross is formed by combination of the metal with oxygen from the air; it is a sort of burning and takes place more rapidly at higher temperatures. The compound of the metal and oxygen is called an oxide. The oxides generally do not possess metallic properties but are earth-like or drossy in character.

‡Solid metals contract as they cool, contracting a certain amount for each degree of temperature drop.

¶The hardness of a metal is usually measured by the Brinell test. In this test a certain sized ball is pressed into the metal under a definite load, the size of the resulting depression varying with the hardness. The result is expressed as a "hardness number," which is greater the harder the metal. In general harder type will wear longer.

"NOT A MARK IN A Million!"

YOU can rush jobs from pressroom to bindery, speed folding machines to capacity and step up the tempo of your entire organization by printing with Morrill's CHROMIUM BLACK, a new, scratch-resisting, high-lustre, quick-drying black for use on coated, super and similar papers . . . "NOT A MARK IN A MILLION" is no mere claim. CHROMIUM BLACK has a hard surface that defies the friction of guides, belts, bars, sharp edges and human hands. Prove it to your own satisfaction and advantage. Write for a sample of Morrill's CHROMIUM BLACK today.

GEO. H. MORRILL CO.
Division General Printing Ink Corporation
100 SIXTH AVENUE NEW YORK, N. Y.
BRANCHES—Boston New York Philadelphia
Detroit Chicago St. Louis Minneapolis
Fort Worth Los Angeles San Francisco Seattle

Chromium Black BY MORRILL

Responsibility

THE POLICEMAN at a school cross walk is responsible for the safety of his charges. Children trust him . . . motorists respect him . . . all depend on him. He is held responsible because of the control he exercises.

Imperial's Plus Plan has control over the type metal in every Imperialized plant. It governs the analysis and adjusts the balance to insure perfect metal performance. This assures minimum of machine and metal trouble . . . it produces sharp faces and clean impressions at low cost.

Because Imperial controls that type metal it voluntarily assumes the unconditional responsibility for the performance of the working supply of metal as soon as the first pound is put into use.

Imperial

IMPERIAL TYPE METAL COMPANY

PHILADELPHIA • NEW YORK • LOS ANGELES • CHICAGO

Books Received

(Continued from Page 20)

sharp impressions have been achieved without embossing on the reverse side of the sheet. The book is so planned that each illustration is backed up by another on the opposite side. If one doesn't inspect too closely, the appearance of the illustrations give an effect of having been done by gravure.

Monotype Caslon Nos. 337 and 137 were used for headings and text. Creation and production directed by Stanley Nowak. The book, which promotes compostion facilities of Typographic Service, was written by Nicholas Samstag and designed by Amos Bethke. Edition is limited to 1700 copies.

IPI Color Guide

A new "Color Guide" containing a range of the colors most useful to printers and advertisers along with information on proper color selection and application is being distributed this month by The International Printing Ink Corporation. T. M. Cleland, New York illustrator, designed a special cover for the Color Guide. It introduces a personified hue circuit with girls in dresses of many different hues circling around a three-dimensional "IPI."

IPI's new Guide, which supersedes the Color Pageant, is not intended as an ink specimen book. According to its producers, it is designed to be a practical reference chart that can be used in selecting colors and appropriate color application since colors are not labeled with trade names or formula number. Instead, three-dimensional color designations, numerically classified, appear beneath each color shown.

A discussion of color relationships and an explanation of the numerical system for designating color is given on a page of information which is included in the Color Guide. By following the numerical designations for each color, users have a simple method of establishing suitable color relationships. For example, in selecting two colors to be used in type matter and background, respectively, it is essential that there be sufficient contrast in value to assure good visibility. A difference of

View of cover of IPI's new Color Guide which is being distributed this month. The Guide is supplied with a stiff board back and perforated tabs for hanging on the pressroom wall.

at least 30 steps in the numerical value designation is given as the minimum for good visibility. The printer can easily pick his colors to conform to this rule by observing the numerical value shown underneath the color samples.

Also on this page are directions for getting the best use from the Guide, a description of spectrophotometric color analysis, and data on ink selection and matching.

A reproduction of a trichromatic color hexagon demonstrates the mixtures possible with standard process inks. The reproduction of precious jewels demonstrates four-color printing.

Four different half-tone blacks are shown, each printed from the same cut to bring out the variations that the four formulations offer. Greys are treated in a separate section where 16 variations of this color are reproduced.

LYDIARD WITH FRED GLEN SMALL

Keith B. Lydiard, for many years connected with the advertising department of the Babcock & Wilcox Co., New York, has joined Fred Glen Small, New York, as account executive specializing on industrial advertising. Mr. Lydiard is secretary-treasurer of the Technical Publicity Association, Inc., New York, and a director in the National Industrial Advertisers Association, Inc.

NEW BLUE PIGMENT IS NOW BEING MADE IN UNITED STATES

Following publication of the development of a new blue pigment in a recent issue of *Printing* EQUIPMENT *Engineer*, the Dyestuffs Division of E. I. du Pont de Nemours & Co., Inc., of Wilmington, Del., announces the first American production of the pigment blue which is to be marketed under the name of "Monastral" Fast Blue BS. This product was introduced recently to the European market by the Imperial Chemical Industries of Great Britain, and by special arrangement with them, the du Pont Company has obtained permission to use the name "Monastral."

"Monastral" Fast Blue is an insoluble pigment producing extremely brilliant shades of blue. It is manufactured in both a highly dispersed powder form as well as a paste. It is claimed to be particularly resistant toward most of the severe color destroying agencies and because of its fastness properties and high tinctorial strength, this product is useful in the printing ink, lake, paint, wall-paper, paper, linoleum, cement, leathercloth, textile and other industries using color.

One of the interesting properties possessed by "Monastral" Fast Blue is its suitability as a trichromatic blue for printing ink. It is said to be desirable for all types of printing as it meets the technical requirements of fine process work, lithography and letterpress. It is also suitable for tin-plate printing as it will withstand temperatures up to 390 deg. F.

This new product, manufacturer states, will be of considerable interest to the lake industry as it possesses fastness to light, alkali, acids and lime and is non-bleeding in oil, water and alcohol. "Monastral" Fast Blue is suitable as a self-color and when used in conjunction with certain du Pont Fast Yellows, a range of bright greens is obtainable which combine the excellent fastness characteristics of both the blue and yellow.

Further claims are made as follows: For the wall-paper industry, "Monastral" Fast Blue is particularly resistant to light and the deleterious action of lime from freshly plastered walls; is perfectly miscible with the wall-paper base and is well adapted to use in the production of washable wall-papers. "Monastral" Fast Blue lives up to all the fastness requirements of the coated paper industry; it is suitable for application in the beater, yielding bright, greenish shades of blue, and because of its splendid fastness to light, acids and alkalies, it may be recommended for cover stock when particular color permanency is desired.

Prices in the U. S. and Canada

50c per large tube; $5 per dozen tubes; $4 per dozen tubes in gross lots.

Stand-A-Lone Holders 2 for 25c, $1 per doz.

Don't Sweat or Swear

In some printing plants it is customary to sweat cuts to bases. Wise mechanical executives save time and fasten cuts to bases without sweating or swearing by using Booth's Zink Cut Cement.

Buy it by the gross and save postage. Keeps indefinitely and can't dry out in the air-tight collapsible metal tube. Use the Stand-A-Lone Holder — the little cement miser which guarantees no waste —no muss.

Booth's Green Rubber Rolls

are of constant diameter from end to end and when used in connection with properly lubricated keyboard cams provide unvarying matrix response. Colored green for your protection.

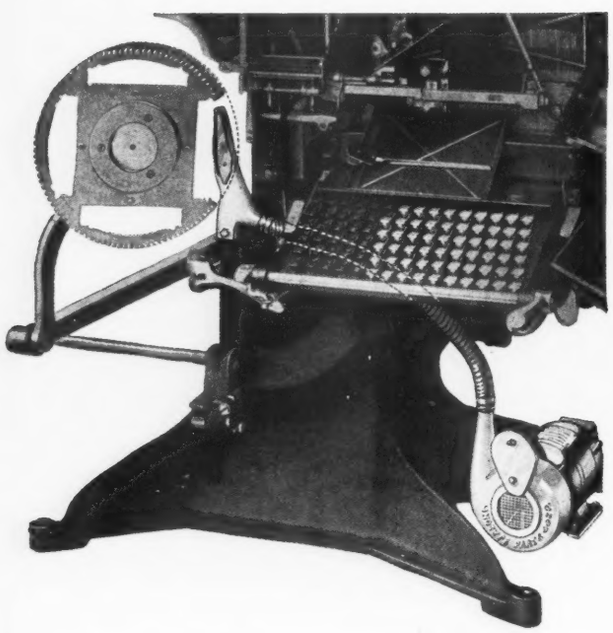
Crepe Finish or Corrugated Tread—as you choose. $1.30 per pair. $7 per dozen; 55c each in lots of 100.

The E. A. **BOOTH** Rubber Co.

364 Rockefeller Bldg. Cleveland, Ohio

Do You Know That Mold Air-Cooling

★ Increases Quality of Slug Production
★ Permits Speeding Up of Production
★ Reduces Warping of Molds and Mold Disks
★ Reduces Frequency of Mold Cleansing



MODEL B BLOWER IS EQUIPPED WITH A ⅛ HORSEPOWER MOTOR

If you cast the equivalent of 10 point solid slugs or over, you should investigate the economies that will result from the installation of a Model B Air Blower.

Many already are paying dividends to owners. Full information will be gladly sent on request—or better still, order one on "ten day approval." Price $40.00 F. O. B. NEW YORK. D. C. Motors $5.00 extra.

Ace Belts for Every Part of Linotype and Intertype Machines Are Specifically Warranted for Minimum of a Year's Service

TRADE ★ MARK

LINOTYPE PARTS CORPORATION

NEW YORK
203 Lafayette St.

KANSAS CITY
314 West 10th St.

CHICAGO—318 West Randolph Street
LOS ANGELES—1520 Georgia Street

HIGH SPEED MULTI-COLOR EQUIPMENT

The Milwaukee (Wis.) *Journal* has placed an order with R. Hoe & Co., Inc., for a complete new color plant, including a new Hoe Super-Production Close Couple 8-Cylinder Multi-Color Newspaper Press with double folders, equipped with reels, automatic tensions and full-speed pasters, and a new Hoe Precision Plate Making Outfit, all for installation early next spring.

The new Hoe color press will consist of close couple design, including solid steel plate and impression cylinders running in roller bearings; individual quick register lock-up which permits registering of the plates individually, both around and across the cylinder; extra wide hardened steel bearers, magazine impression throw-off for each plate and impression cylinder by means of which any or all impressions may be thrown off to preserve makeready when threading the press and when making single color proofs or when registering plates.

The entire press, it is announced, will be of massive and rigid construction and its low-down construction, due to its close couple design, will be conducive to close register and highest speeds without vibration and the frictionless bearings throughout the entire press together with the use of helical drive and cylinder gears will insure smooth and quiet operation.

INTERTYPE-SET IN ARABIC

Al-Ahram (The Pyramids) of Cario, Egypt, largest Arabic newspaper in the world, is now being set on Intertype machines with special Arabic matrices. In designing line composing machine matrices for this language, it was necessary to reduce the number of characters as compared with the number used in hand composition. Before adopting the type thus altered, *Al-Ahram* circulated specimen paragraphs among a number of its readers and obtained a most favorable reaction to the innovation. Anyone who understands Arabic can read the machine-set type without difficulty.

It is stated that the Intertype keyboard arrangement is suitable not only for Arabic but also for Egyptian, Persian, Turkish and Malay languages.

MAGAZINE PRESS FOR THE SOUTH

The Publishing House of the Methodist Episcopal Church, South, Nashville, Tenn., has ordered from R. Hoe & Co., Inc., a new Hoe 48-page Super-Production Magazine Rotary Press. This new press will be designed and constructed for the printing of two different size products, printed in two colors at high speed with the pages pasted before delivery. In the design of this new press will be incorporated Hoe anti-friction bearings, automatic web tension devices, solid steel cylinders, helical and spiral gearing, extra rigidity of printing units, oil-tight gear housings, oil offset devices and a special two-size high speed folder.

GRANTED PATENT ON BORDER BLOCK

Arthur M. Schank, 1741 E. 48th St., Brooklyn, N. Y., and who is employed in the Brooklyn *Times-Union* composing room, has been granted Patent No. 2,054,952 on a border slide and block for use on Ludlow line-casting machines. The block is held in a standard Ludlow stick. The block Border slides such as are used on Intertypes and Linotypes can be used in a modified form of the block devised by Mr. Schank.

Mr. Schank is a member of New York Typo Union No. 6 and was editor of *The Hospital Review* at U. S. General Hospital No. 1, Williams Bridge, New York, U. S. Army in the World War.

On account of the market advance of tin, it will pay to install at once the MONARCH DROSS RENOVATOR complete with motor and gas burners for the practical recovery of valuable tin, antimony, etc., from dross from the stereotype or linotype departments. It will save 70% or more in operation. We supply fluxes for printers and are builders of the MONARCH MONOMETER REMELTING FURNACES, Double Screw and Plain Tables, etc.—The Monarch Engineering & Manufacturing Company, Curtis Bay, Baltimore, Md.

Equipment

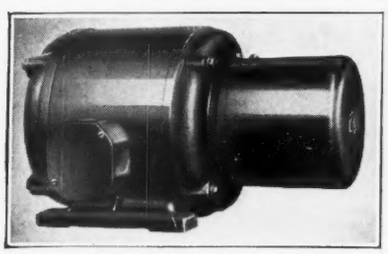
(*Continued from Page 17*)

delivery end of the press. The unit over the transfer cylinder aids in setting the first color and is said to insure a better trap of the second color. Besides the advantages mentioned previously, the unit mounted between the two printing cylinders is claimed to be particularly beneficial with respect to the elimination of static.

It is claimed by C. E. McKensey, developer of the heater, that the radiant heat from the units permits the utilization of all the oxygen in the immediate vicinity of the paper free to aid in oxidizing the ink, and that the application of electric heat is of such a degree of penetration that it will remain permanently in the stock pile after printing for 18 hours.

Cutler-Hammer Motor Mounted Brake

A totally enclosed, automatic solenoid brake integral with the motor from fractional h.p. to 10 h.p. (at 3600 r.p.m.) is announced by Cutler-Hammer, Inc. This brake can be supplied already mounted on any motor from the motor manufacturer to save the trouble and expense of mounting and aligning. It is suitable for



View of Cutler-Hammer new motor mounted automatic solenoid brake for fractional h.p. up to 10 h.p. motors.

job presses, hoists, elevators, dumb-waiters, machine tools, and other applications.

The rotating member, consisting of a single heavy molded disc, which, it is claimed, shows little wear on exhaustive life tests even for maximum h.p. The enclosing case protects it from dirt and mechanical injury. This brake is suitable for a.c. or d.c. and is available with dust-tight, weather-proof and water-tight enclosures.

Paper Lacquer Portfolio

A portfolio demonstrating the use of paper lacquer for protecting and enhancing the beauty as well as intensifying fine color work is being sent out by Maas & Waldstein Company, lacquer manufacturers. The portfolio contains two identical designs in six colors, one of which is just as it came from the press while the other has been treated with a coat of Crystalustre, a new lacquer for paper and cardboard.

Lacquer may be used for car cards, window cards, displays, cartons, labels, wrappers, menus, and other kinds of printed and lithographed art work.

Crystalustre, the manufacturer claims, is flexible, colorless, odorless, quick drying and protects the surface to which it is applied from dirt, discoloration, stains, and the effects of water, soap, grease, oil and fat, and alcoholic beverages, and will not darken with age, discolor white or light colors, or become soft and tacky.

OPENS NEW OFFICE

A new and enlarged Philadelphia branch office has been opened at 29 North Sixth St., Philadelphia, by the Eagle Printing Ink Co., Div. of General Printing Ink Corporation. Announcements inviting printing executives to visit the new office have been sent to those in the territory to be served by the Eagle Printing Ink Co.

STEREOTYPERS

Are the Minute Men of Newspaper Production

BECAUSE their work intervenes between composing the paper and its appearance in public, all stereo development has been directed toward instant action, short cuts, time saving appliances.

The stereotyper's whole day is planned for this burst of press-time speed. One of his outstanding aids is the modern dry mat, which for best results should be easy molding, quick scorching, low temperature casting and uniform in quality.

For dependable stereotyping rely on Certified Mats, made in the U. S. A.

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Time Savers— Money Savers

C & G Strip Material Cabinet

Something every saw trimmer owner can use to advantage. Speeds up production; places strip material where it belongs. Built of heavy sheet steel. Height 34 in., length 24½ in., width 13 in. Holds over 1200 lbs. of metal. Can be used with any saw trimmer. Top is convenient for work bench. Opening at top for tools and accessories or additional strip and basing material.

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C & G Waste Receptacles

No. 20—Sturdily built of heavy sheet steel. Capacity 1467 cu. in. Handle raises to convenient height for moving waste receptacle.

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No. 2 C & G Saw Trimmer

$250.00

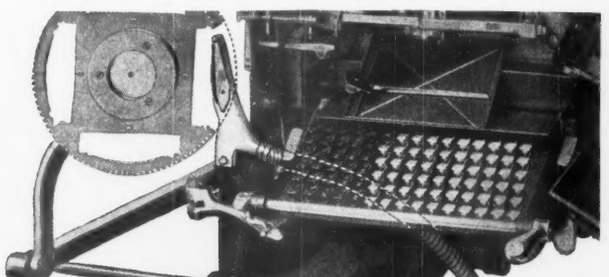
Standard Equipped

MILWAUKEE SAW TRIMMER CORPORATION

610-612 East Clybourn St. Milwaukee, Wis.

Model B Mold-Cooling Blower

The Model B Mold-Cooling Blower for use on intertypes and linotypes is usually set on the floor below and behind the keyboard. A metallic tube conveys the air to a nozzle attached to the starting and stopping lever



View of Model B Mold-Cooling Blower attached to line-casting machine.

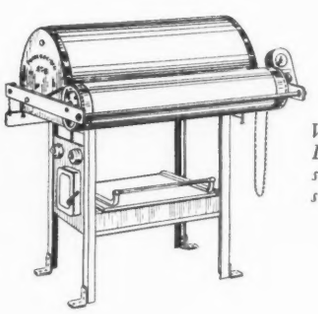
bracket. The blower itself is attached directly to a ⅛ h.p. motor and operates at a speed of 3500 r.p.m.

On the Intertype, an air deflector is provided instead of a nozzle. The deflector is attached similarly to the nozzle used on Linotypes except that the ejector slide shield is permanently removed.

The Model B Blower directs the air cooling stream directly to the back of the active mold.

Model G Scorcher

The American Publishers Supply has developed a combination flat and curved stereotype matrix scorching machine. The machine is constructed in two sections. The curved scorching mechanism is at the top and the



View of Model G. Form-O-Scorch. It is equipped with two separate scorchers—one for semi-cylindrical shape and one for flat mats.

flat scorching mechanism is mounted underneath the curved scorcher.

The semi-cylindrical section is controlled with a three-heat manual control switch and is fitted with the Form-O-Scorch self-conforming cover with adjustable tension. The top section has full-sized mat capacity and the drying area is 28 in. by 30 in.

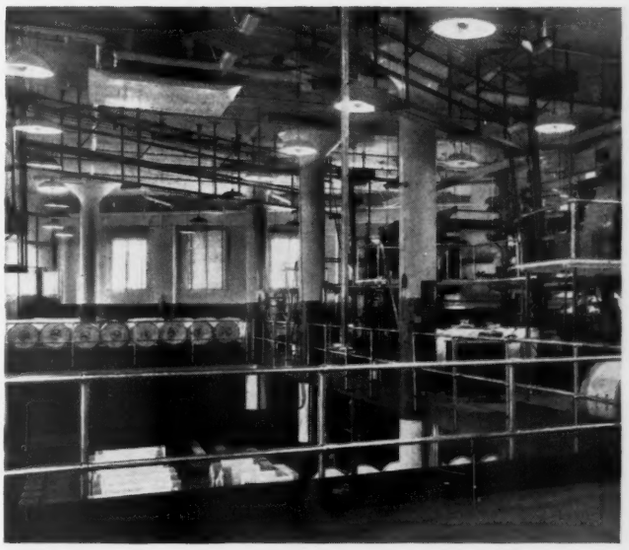
The flat section consists of the heating chamber of the Model H flat Form-O-Scorch built into the machine. It is fitted with a single balanced heat control and has a drying area of 20 in. by 26 in. for full-page mats.

The control switch at the side of the Model G permits separate operation of each scorcher section. An automatic timer is standard equipment.

Silvered Bowl Mazda Lamp

In modernizing their equipment, plant owners and mechanical executives often take plant lighting for granted. Practical experience has proved that good lighting materially reduces the wastes of spoilage, accidents, slow production and imperfect workmanship—often turning loss into profit. No matter how fine and new a machine is, the work produced upon it is dependent upon the skill of the man who operates it. Accurate register and matching of colors are jeopardized if the pressman isn't provided with sufficient light in which to work. Fast moving machinery shrouded in shadow greatly increases the menace of accidents. Many printing plants have sprinkler systems and other appurtenances which make it impossible in all cases to utilize the ceiling as a light reflecting surface. Hence, it is advisable to install a reflecting surface with each lighting element in the plant.

Silvray Lighting, Inc., announces the development of a silvered bowl mazda lamp for use in connection with Silvray Industrial Reflectors to provide "industrial daylight." The light emitted is said to be intense, glareless, shadowless and indirect. The silvered bowl mazda lamp is a regular mazda lamp to the bowl of which has been applied a mirror silver covering. Manufacturer states that as a result two things are accomplished: (1) It shields the brilliant filament of the bulb from the eye, and (2) The reflecting surface is "sealed" to the bowl of the lamp, making it its own reflector. Cleaning maintenance is reduced to the minimum. The eye-shielding feature of the Silvray system of illumination makes possible the use of the inherent high efficiency of 750, 1000 and 1500 watt silvered bowl lamps.



Section of pressroom in plant of the Christian Science Publishing Society plant, Boston, Mass., in which are used Silvray Industrial Lighting Units.

Who Sent It?

The editor appreciates the comment cards received from our readers related to the editorial content of this magazine. In all cases, however, we like to know from whom the cards are received. Among the many cards received at the offices of Printing Equipment Engineer *following publication of the November book, there was one without signature. The suggestion on the card has reference to difficult production problems. Will the writer of that card please get in touch with the editor?*

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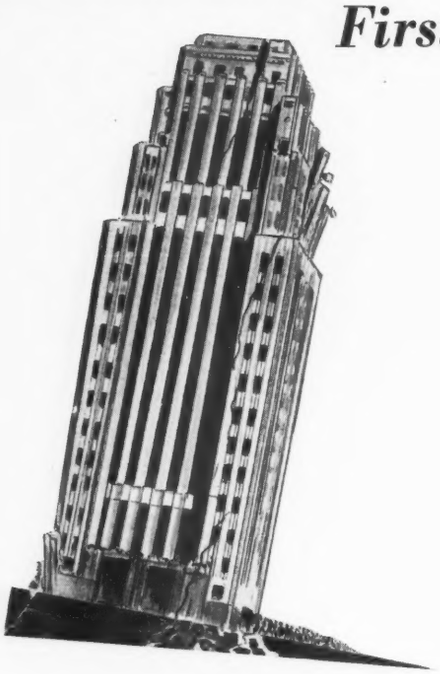
Gazzolo Drug and Chemical Co., 119 So. Green St., Chicago, Ill.
E. H. Walker Supply Co., Printcraft Bldg., Washington, D. C.
Selby Mohr, 883 Mission St., San Francisco, Cal.
C. S. Illingworth, 49 Springville Avenue, Buffalo, New York
Thompson-Hayward Chemical Co., 2228 Blake St., Denver, Colo.
Thompson-Hayward Chemical Co., 909 2nd St. So., Minneapolis, Minn.
Metzger Photo Supply Co., 1091 So. Main St., Akron, Ohio
G. C. Dom Supply Co., 125 East Pearl St., Cincinnati, Ohio

Put
DEPENDABILITY
First



Would you erect a building on a faulty foundation?

NO modern engineer would consider putting up a costly building on an uncertain foundation. Such action would be a waste of time and money.

Successful engravers today, likewise, realize it is a waste of time and money to use uncertain zinc as a foundation for costly engravings. That is why the majority of photo engravers put dependability first by specifying Zomo Electric Zinc for all regular work and A-Z Alloy for long direct printing runs. These metals are melted and cast in the electric induction furnace which assures a composition 99.95% exact.

Leading metal distributors in the United States, Canada and England carry stocks of these metals.

ZOMO ELECTRIC ZINC
A-Z ELECTRIC ALLOY

Patents

October—November

Composing Machines:

2,057,775. MAGAZINE OF TYPOGRAPHICAL COMPOSING MACHINES. William Fairall Gorse, Altrincham, England, assignor to Linotype and Machinery Limited, London, England, a limited liability company. Application July 3, 1935, Serial No. 29,727. In Great Britain July 4, 1934. 3 Claims. (Cl. 199—45.)

1. In a typographical composing machine, the combination with a plurality of magazines adjustable columnwise to bring a selected magazine into operative position, of means adapted to counterbalance the magazines comprising a shaft tending to turn under the weight of the magazines, a continuous peripheral cam fast on the shaft, a counterbalancing spring, a flexible transmission member secured at respectively opposite ends to the cam and spring and engaging the periphery of the cam throughout its range of movement whereby a counterbalancing force is applied to the cam at varying distances from the axis of the shaft in a direction bearing a substantially constant angular relationship to the radius of the cam extending from the axis of the shaft to the point of application of the force.

2,057,795. DISTRIBUTING MECHANISM OF TYPOGRAPHICAL COMPOSING AND DISTRIBUTING MACHINES. Richard Henry Scott, Enfield, England, assignor to Linotype and Machinery Limited, London, England, a British company. Application January 29, 1936, Serial No. 61,261. In Great Britain February 8, 1935. 10 Claims. (Cl. 199—39.)

1. In a typographical composing and distributing machine, the combination of a plurality of vertically superposed distributors and magazine entrances arranged in overlapping relationship for conducting matrices from the distributors to a corresponding plurality of magazines, of a pivot for an upper magazine entrance located at the rear and above the next lower distributor, and means operable to displace the pivot in a substantially horizontal direction to carry the entrance from and to the operative position.

3. In a typographical composing and distributing machine, the combination of a plurality of vertically superposed distributors and magazine entrances arranged in overlapping relationship for conducting matrices from the distributors to a corresponding plurality of magazines, of a pivot for an upper magazine entrance located at the rear and above the next lower distributor, means operable to displace the pivot rearwardly in a substantially horizontal direction to carry the entrance to an inoperative position and means adapted to impart a supplemental substantially horizontal rearward movement to the pivot to carry the entrance to a second inoperative position.

2,058,137. TYPOGRAPHIC KEYBOARD MECHANISM. Gordon W. Curtiss, Atlanta, Ga. Application May 29, 1936, Serial No. 82,552. 11 Claims. (Cl. 164—112.)

1. A typographic keyboard machine for producing signal perforations in a record strip and measuring the set values of the types represented by such signals, comprising punches for perforating the type signals and including an S-punch for perforating the space signal, a unit measuring wheel, a unit rack, a system of levers for meshing and unmeshing the rack with the wheel, a back or zero stop for the unit rack comprising a yielding abutment and a spring pressed latch, the latch being positioned out of operable relation to the lever system, an extension between the lever system and the latch, and carried by one of the parts whereby the latter is operated by the movement of the former, forward stops for the unit rack, connections between certain of the punches and the stops and including stop bars, one of the bars, the S-bar, being formed in two separated parts, the upper part connected with the S-punch and the lower with the S stop, the upper part when operated downwardly forcing the lower part laterally into the path of motion of a second bar, whereby the operation of the upper part of the S-bar will not throw up the S-stop, but the operation of the upper part of the S-bar and of the second bar will cause the stop connected with the second bar and also the S-stop to be thrown up into operated position.

2,058,195. LINE CASTING MACHINE. Lester M. Walden, New York, N. Y., assignor to Teletype Corporation, Chicago, Ill., a corporation of Delaware. Application June 7, 1934, Serial No. 729,348. 5 Claims. (Cl. 199—24.)

1. In a linecasting and composing machine, a plurality of matrix release members arranged in horizontal alignment, a release reed, means for shifting the reed so as to present it into registration with diverse ones of the release members including a shifting lever, a matrix delivery slide operating lever, means conditioned upon the movement of the operating lever for imparting motion to the shifting lever, and an automatic control apparatus for initiating the performance of the operating lever.

2,058,378. METAL POT FOR LINE CASTING MACHINES. Herman R. Freund, Brooklyn, N. Y., assignor to Intertype Corporation, Brooklyn, N. Y., a corporation of New York. Application March 29, 1935, Serial No. 13,754. 8 Claims. (Cl. 22—70.)

1. In or for a slug casting machine, a metal pot comprising a reservoir for molten metal, a pump well contained in the reservoir to receive molten metal therefrom, and a passage leading from the well and reservoir for conducting molten metal therefrom, the passage comprising a plurality of sections thermally insulated one from another.

2,059,250. KEYBOARD PERFORATOR AND COUNTER. Howard L. Krum, Kenilworth, Ill., assignor to Teletype Corporation, Chicago, Ill., a corporation of Delaware. Application May 26, 1932, Serial No. 613,706. 34 Claims. (Cl. 164—112.)

1. In a device for preparing control strips for linecasting machines, a counting mechanism operated in incremental amounts representative of matrix widths, a plurality of elements, permutation means comprising a plurality of members operable in varying combinations, each combination effective to select one of the elements for operation in accordance with various widths of the matrices, and means controlled through the means and co-acting with the elements for determining the extent of operation of the counting mechanism.

Feeding, Folding, Delivery:

2,058,876. FOLDING MACHINE. Reuben Hitchcock, deceased, late of Cleveland, Ohio, by Lawrence Hitchcock, H. Morley Hitchcock, and C. W. Hitchcock, Cleveland, and D. B. Meacham, Cincinnati, Ohio, executors, assignors to Dexter Folder Company, New York, N. Y., a corporation of New York. Application April 17, 1935, Serial No. 16,824. 20 Claims. (Cl. 270—68.)

1. In a folding machine of the buckle type, a first fold mechanism or unit comprising two vertically and laterally spaced groups of juxtaposed horizontally extending parallel sheet

(Continued on Page 46)

Patent Papers:

Printed copies of patents are furnished by the United States Patent Office at 10 cents each. Address the Commissioner of Patents, Washington, D. C., and enclose 10 cents for each patent paper wanted.

Type Metals

(*Continued from Page 35*)

established in recent years by Dean, Zickrick, and Nix[1] by Endo[2] and by Matuyama[3].

Dean, Zitrick, and Nix determined the change in volume of several type-metal compositions during melting by the use of a pyrex glass dilatometer. In this method the type-metal sample was melted and poured into a pyrex glass tube which had a narrow or capillary portion toward the top. The metal was then allowed to solidify after which melted Crisco was poured on top of it. The metal was then heated close to its melting point (the Crisco is, of course, liquid at these temperatures) and finally melted, and the change in volume during melting accurately measured by the movement of the molten Crisco in the narrow or capillary portion of the tube. All the type-metals tested expanded on melting, indicating they would contract on solidifying, as shown in Table I below.

TABLE I. Expansion of Type-Metal Alloys On Melting (1)

Antimony-Lead Alloys per cent Antimony	Volume of Alloy cc	Expansion on Melting cc	Expansion per cent
10	107	2.45	2.31
12	105	2.42	2.47
16	114	2.35	2.06

Matuyama[3] using a thermobalance for measuring the change in buoyancy of the metal during solidification when suspended in an inactive liquid, also found that type metals contract on solidification. His results are given in Table II.

TABLE II. Contraction of Type-Metals On Solidivication (3)

Metal	Composition Lead %	Anti-mony %	Tin %	Copper %	Contraction on Solidification %
Linotype Metal....	79	16	5	..	2.0
Monotype Metal...	76	16	8	..	2.0
Stereotype Metal...	83.7	11.3	4	0.5	2.0
Electrotype Metal..	92	4	4	..	2.6
High Tin-Antimony Metal.....	50	25	25	..	1.2
Pure Antimony....	..	100	..	..	−0.9
Pure Bismuth.....	..	..	..	..	−3.3
Pure Lead.....	100	..	..	..	3.4
Pure Tin.....	..	..	100	..	2.8
Pure Zinc.....	..	..	..	..	6.5
Pure Aluminum....	..	..	..	..	6.3

(*Continued on Page 48*)

1—Dean, R. S., L. Zickrick, and F. C. Nix. The Lead-Antimony System and Hardening of Lead Alloys. Trans. Am. Inst. Min. & Met. Engrs. Vol. 73, 1926, p 505.

2—H. Endo. On the Measurement of the Change of Volume in Alloys During Solidification. Science Reports, Tohoku Imp. U. series I, vol. 13, 1924, p 193.

3—Y. Matuyama. On the Volume Change in Certain Type Metals during Solidification. Science Reports, Tohoku Imp. U. series I, vol. 17, p 1.

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Technical Literature

for December, 1936

Readers of *Printing* EQUIPMENT *Engineer* who are interested, may secure any of the Books, Catalogs or Bulletins listed below by checking the literature desired in the square opposite the title. Mark carefully only that literature which you wish to receive. Fill out the coupon and send it to us. The literature will be forwarded gratis except where noted.

☐ *Swank and Sophisticated*—Folder introduces new foundry type face. All characters shown with suggested purpose of face.

☐ *Folder*—Announces a number of surveys available on bronzing machine costs, each curvey being devoted to a specific kind of bronzing work.

☐ *How To Profit with Air Express*—Folder presents in attractive manner presses and other machinery.

☐ *What Makes the Wheels Go 'round So Profitably?*—Illustrated folder describes mechanical features of automatic 12 in. by 18 in. printing press.

☐ *Graham Variable Speed Transmission*—Bulletin (illustrated) gives description and data of transmission for controlling speeds of printing presses in connection with 1, 3 and 5 h.p. motors.

☐ *Ludlow's Eden*—Deluxe showing of various sizes of Eden light and bold available in Ludlow matrix form. Actual settings of advertisements show appropriate uses, as well as pages containing showings of sizes in which both faces are made.

☐ *A Five-Year Record*—Booklet shows specimens of 74 type faces (one size only of each series) which have been cut in the period from 1931 to 1936 by Lanston Monotype Machine Co. Announcement is also made of the cutting of Twentieth Century Family of type faces in light, medium, bold and extra bold with corresponding italics which have been finished, are now being made or are in process.

☐ *Solving Industrial Crimes, Case No. 13*—Illustrated booklet describes indicative and recording instruments for use in the printing plant on presses and other machinery.

☐ *What Happens When You Ship a Package?*—Sixteen-page booklet shows by illustrations the progressive delivery of a package delivered by Express to any part of the country and how it is handled all the way to its destination.

☐ *Check for Progress*—Illustrated folder describing features of numbering machines.

☐ *Precision Lathe Catalog*—New illustrated 24-page catalog describing 1937 model 9-in. workshop precision lathe. The lathe is back-geared and may be used for screw cutting. Illustrations describing 38 attachments for use in performing various operations on the lathe are included.

☐ *Proof of Value of Crystalustre*—Folder containing duplicate specimens of color printing, one without Crystalustre coating and the other which has been treated with the coating for comparative purposes. Specimen printing is 8½ in. by 11½ in. printed in several colors and black.

Printing EQUIPMENT *Engineer*,
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MERGENTHALER RE-ELECTS

At the annual stockholders' meeting of the Mergenthaler Linotype Company, November 18, all members of the former board of directors were re-elected, and at the board meeting that followed, officers for the ensuing fiscal year were elected.

Norman Dodge is chairman of the board of directors, and other members are: Albert H. Sawyer, Ogden L. Mills, Ogden M. Reid, Frederic D. McKenney, Joseph T. Mackey, Roy C. Gasser, George Hewitt Myers and Victor E. Walker.

The executive committee is composed of Norman Dodge, Joseph T. Mackey, Albert H. Sawyer, Ogden M. Reid and Frederic D. McKenney.

Joseph T. Mackey is president of the company; Frederic D. McKenney, vice president and general counsel; William Wallace Welsh, secretary; George L. Schwaninger, treasurer; Thomas J. Mercer, vice president in charge of audits; Conrad A. Hanson, vice president in charge of works; Harry L. Gage, vice president in charge of sales; C. H. Griffith, vice president in charge of typographic development, and John W. Reid, Edward A. Reynolds, William H. Moore and Benjamin C. Bishop are assistant secretaries and treasurers. Reginald W. Orcutt was made vice president for overseas, and Eugene B. Mirovitch was made vice president for Latin America.

ALEXANDER RESIGNS

Harry W. Alexander has resigned as Vice President of Sales, American Type Founders Sales Corporation, Elizabeth, N. J. His new connection will be announced February 1. In the meantime, he will vacation in Nassau.

During his four years with American Type Founders, sales tripled. Unusual sales methods were introduced into a capital goods industry. Mr. Alexander created and organized the "Printers Progress Special." He is said to be one of the most widely traveled sales executives.

OPENS DIRECT FACTORY BRANCH

The Sigmund Ullman Company, Div. of General Printing Ink Corporation, has announced the opening of a direct factory branch to serve the printers of Philadelphia and vicinity at 29 N. Sixth St., Philadelphia.

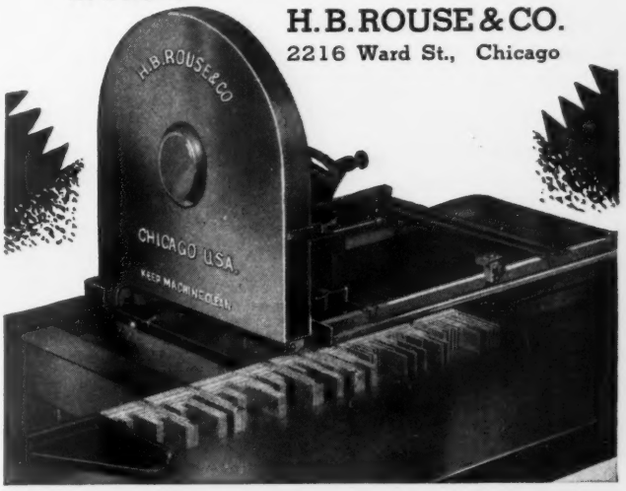
H. V. Bricka is manager of the branch which has taken over the accounts of the Franklin Ink Corporation.

DEPENDABLE AND *Fast*

The ROUSE BAND SAW is built to produce speedily and accurately day after day. Its construction permits no variance from dependable performance whether cutting a single galley or thousands.

An illustrated circular shows how accuracy is maintained on the ROUSE BAND SAW while it automatically selects slug lengths, and cuts to variable measure, a full galley of slugs in 35 seconds. Write for it NOW.

H. B. ROUSE & CO.
2216 Ward St., Chicago



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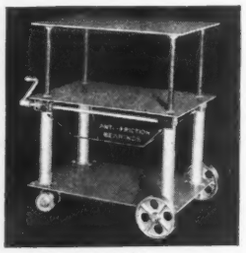
BURGESS CHROME MATS

BURGESS CHROME MATS



Hamilton Portable Elevating Transfer Table

THE Hamilton Portable Elevating Transfer Table (Patented) is unsurpassed for transferring forms to and from steam tables and matrix rolling machines, or for transferring type pages to and from storage to imposing stone. It has a large range between low and high positions, which makes it adaptable for filing forms. Easy to operate. All steel construction. The top is a heavy steel plate, smoothly machined thus insuring an accurate working surface.

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Uniform, quick-scorching FLEX dry mats will simplify and at the same time improve your stereotyping. They mold well at low pressures —and make better plates at moderate casting temperatures.

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Try FLEX dry mats—at our expense. Simply specify thickness, shrink, number of casts per mat, and type of casting equipment. Samples will be sent without cost or obligation.

FLEXIDEAL DRY MAT COMPANY
21 West Street **New York**

Patents

(Continued from Page 42)

feeding and folding rollers and four horizontally extending fold plates operatively associated with certain rollers of the groups and located one at each side of each group, means for driving the rollers of the lower group from the rollers of the upper group, inclined means interposed between the two groups for delivering sheets from lower rollers of the upper group to upper rollers of the lower group, and a plurality of means one for each roller of each group and adapted to prevent deflection of the rollers, the last named means comprising devices rotatably mounted in the machine above and below the fold plates of both groups and each rotatably engaging one of the rollers thereof.

2,058,877. MACHINE FOR FOLDING PAPER OR OTHER MATERIALS. Reuben Hitchcock, deceased, late of Cleveland, Ohio, by Lawrence Hitchcock, H. Morley Hitchcock, C. W. Hitchcock, Cleveland, and D. B. Meacham, Cincinnati, Ohio, executors, assignors to Dexter Folder Company, New York, N. Y., a corporation of New York. Application April 17, 1935, Serial No. 16,825. 20 Claims. (Cl. 270—68.)

1. In a folding machine, a vertical bank or series of horizontal feeding and folding rollers and a plurality of horizontal fold plates associated with the bank or series alternately upon opposite sides, a verteal frame disposed below the rollers and the fold plates and having horizontal guide means and vertical guide means for a series of separate folded sheet sections delivered downwardly through the latter to stand on their lower edges on the horizontal guide means, cutting mechanism mounted on the vertical frame and comprising a plurality of spaced cutters rotatable on a horizontal axis and adapted to form the series of separate sheet sections from a folded sheet delivered to the cutters through certain of the rollers, a cross fold mechanism adjacent one end of the horizontal guide means and comprising a vertical fold plate and similarly disposed feeding and folding rollers associated therewith, and cross feed devices arranged on the horizontal guide means in two opposed rows extending therealong substantialy throughout the length thereof, the cross feed devices being adapted to engage the lower edge portions of the series of folded sheet sections on both sides of each section and feed the sections one after another in standing position along the horizontal guide means and through the vertical guide means to the cross fold mechanism.

2,059,677. FEEDER FOR PRINTING PRESSES. Frank R. Belluche, Racine, Wis., assignor to Christensen Machine Company, Racine, Wis., a corporation of Wisconsin. Application August 26, 1935, Serial No. 37,920. 17 Claims. (Cl. 271—9.)

1. Feeding means for printing machines and the like having a front guide, comprising a plurality of sheet separating means, and means for carrying successive sheets first from one and then another of the sheet separating means directly to the front guide.

2,059,873. MACHINE FOR TRIMMING AND SPLICING THE WASTE ENDS OF PAPER AND SIMILAR WEBS. John A. Jones and Alfred C. Miller, Baltimore, Md. Application April 8, 1936, Serial No. 73,382. 17 Claims. (Cl. 164—77.)

9. The combination in a machine for splicing the waste ends of paper and similar webs to form them into a continuous web, means for supporting a let off roll for waste ends, and a take up roll to carry a continuous web, rolls being in parallel and spaced apart in let off and take up relation, the rolls being rotatable to transfer the web as it is formed from the let off roll to the take up roll and a table extending across the machine between rolls and adapted to support the web, a cutting edge intermediate the table extending across the path of the web in the direction of the roll axes, web holding means on one side of the edge, a cutter bar on the side of the cutting edge opposite to the web holding means, the cutter bar having guiding means permitting it to be moved into and out of contact with the web on the table, and a cutting edge extending in the direction of the first mentioned cutting edge, means for holding the paper on the cutter bar on the side of the cutting edge remote from the first mentioned cutting edge, ways extending transversely the path of the web adjacent the table, a cutter carriage adapted to be moved across the table on the ways, cutters on the carriage adapted to cooperate respectively with the edges as the carriage moves across the machine, the cutters being mounted to rotate and also to move transversely to the cutting plane and springs for holding them in cutting contact with the cutting edges.

2,060,359. WEB SPLICING DEVICE. Henry A. Wise Wood, New York, N. Y., assignor to Wood Newspaper Machinery Corporation, New York, N. Y., a corporation of Virginia. Application October 27, 1932, Serial No. 639,786. 19 Claims. (Cl. 242—58.)

2. In a pasting device, the combination with a support for a fresh web roll and a movable frame for supporting a web pressing means, of means whereby, when the movable frame is moved into operative position to press the running web against the fresh roll, the fresh roll will be started into a motion of rotation.

2,060,360. WEB ROLL SUPPORT. Henry A. Wise Wood, New York, N. Y., assignor to Wood Newspaper Machinery Corporation, New York, N. Y., a corporation of Virginia. Original application February 25, 1932, Serial No. 595,059. Divided and this application December 5, 1933, Serial No. 700,966. Renewed March 16, 1936. 6 Claims. (Cl. 242—64.)

1. In a support for web rolls, the combination of a reel adapted to turn on an axis, means on the reel for supporting a web roll, and means for swinging the web roll about an axis at a distance from the axis of the reel and rotatable therewith as the reel rotates.

Miscellaneous:

2,058,006. LEATHER PRINTING AND TIPPING MACHINE. Paul Dornbusch, Krefeld, Germany. Application June 29, 1935, Serial No. 29,089. 9 Claims. (Cl. 101—37.)

1. A method for printing whole hides with printers' ink, etc., consisting in unwinding a web from a supply roll of web material and continuously passing the web between a printing drum and a printing cylinder and then re-winding the web on a receiving roll, and feeding hides upon the web to pass them through between the printing drum and the printing cylinder to be printed.

5. A leather printing and tipping machine for using printers' ink, etc., comprising a frame, a printing drum mounted on the frame, a printing cylinder adjustably mounted on the frame and cooperating with the printing drum to print hides passed there-between, a controlled ink supply for the printing cylinder, and a hide carrying agent for carrying hides between the printing cylinder and drum and drawn from a stored supply and re-stored after passing between the printing drum and printing cylinder.

2,058,074. SHEET SUPPORTING MEANS. George E. Froelich, Two Rivers, Wis., assignor to Hamilton Manufacturing Company, Two Rivers, Wis., a corporation of Wisconsin. Application October 8, 1934, Serial No. 747,273. 12 Claims. (Cl. 129—1.)

4. In a device, the combination of a relatively shallow rectangular sheet container having front and rear walls, side walls, and a flat base, a partial closure for the container, and a sheet supporting bar extending between the side walls and slidable therealong from front to rear of the container between the front wall and the partial closure.

2,058,396. PHOTOINK PRINTING. Elton N. Baker, Chicago, Ill. Application March 13, 1933, Serial No. 660,476. 4 Claims. (Cl. 95—5.4.)

1. A process of preparing a printing plate, comprising photographically exposing a plate having a surface of colloid containing a photo-sensitive silver salt and developing the plate to reduce the exposed silver salt, partially etching out the colloid containing reduced silver salt, thus leaving colloid on the areas, redeveloping the plate so as to reduce the remaining silver salts, and then submitting the plate to a chromate bleach bath to harden the surface thereof, whereby to form a lithographic printing plate wherein the etched portions will accept water and thus repel ink and the unetched portions will accept ink.

Plate Making:

2,060,358. APPARATUS FOR COOLING PRINTING PLATES. Henry A. Wise Wood, New York, N. Y., assignor to Wood Newspaper Machinery Corporation, New York, N. Y., a corporation of Virginia. Application March 31, 1930, Serial No. 440,416. Renewed September 5, 1934. 12 Claims. (Cl. 29—21.)

12. In a device for finishing curved stereotype printing plates, the combination of an arch, and radially acting means for pressing all printing surfaces of the plate firmly and simultaneously against the arch, with means for shaving the plate and for placing cooling fluid on the plate while it is so held.

2,060,640. METHOD OF MAKING INTAGLIO PRINTING PLATES. Charles P. Shaw, Detroit, Mich., assignor to Detroit Moulding Corporation, Detroit, Mich. Application December 17, 1934, Serial No. 757,792. 13 Claims. (Cl. 95—5.7.)

1. The method of making an intaglio plate for offset printing, which comprises the steps of making a continuous tone negative of the subject, converting the continuous tone negative into a positive transparency, modifying the tone and detail of the positive transparency, lighting the transparency by reflected light passing through the transparency and being diffused and refracted thereby, making a screen negative of the transparency so lighted by exposure first with a fairly large stop for three minutes to bring out the high lights, then with a stop of one-half the size of the first for three and one-half minutes to bring out the middle tones, and finally with a stop one-fourth the size of the second for six minutes to bring out the shadows, making a screen positive from the screen negative, and making an etched intaglio printing plate from the screen positive, the exposures and etching being controlled so that the depth of the cells is directly proportional to their area.

Printing Presses:

2,058,759. ROTARY PRINTING PRESS. Howard M. Barber, Pawcatuck, Conn. assignor to C. B. Cottrel & Sons Company, Westerly, R. I., a corporation of Delaware. Application February 16, 1935, Serial No. 6,804. 5 Claims. (Cl. 101—153.)

1. In a rotary printing press, a frame, a form cylinder, a form cylinder shaft, a shaft extension, a drive located at one side of the frame and connected to the shaft extension, and manually operated means located at the other side of the frame and connected to the shaft extension for importing endwise movement to the form cylinder.

2,058,760. ROTARY PRINTING PRESS. Howard M. Barber, Pawcatuck, Conn., assignor to C. B. Cottrell & Sons Company, Westerly, R. I., a corporation of Delaware. Application February 16, 1935, Serial No. 6,805. 5 Claims. (Cl. 308—58.)

1. In a rotary printing press, a frame, a form cylinder, its shaft, removable shaft locking members slidable in a right line in the frame, separate locking and starting devices for the members, and manually controlled means operable to first cause the locking devices to release the members and to thereafter cause the starting devices to move the members a short distance only on their removal movements.

2,058,888. PRINTING PRESS CYLINDER MECHANISM. Joseph F. Jirousek, Cleveland, Ohio, assignor to The Chandler & Price Company, Cleveland, Ohio, a corporation of Ohio. Application June 10, 1935, Serial No. 25,754. 11 Claims. (Cl. 101—409.)

3. In printing press cylinder mechanism, a heavy metal cylinder shell having a longitudinally cut-out section, gripper mechanism and weighting means in such cut-out section, and a light metal cover plate for the cut-out.

2,060,082. MEANS FOR ATTACHING PRINTING PLATES TO PRESSES. Frank R. Johnson, Floral Park, N. Y., and Charles F. Pflanze, University City, Mo.; said Johnson assignor to said Pflanze. Application March 13, 1935, Serial No. 10,762. 6 Claims. (Cl. 101—378.)

1. A printing press including a part adapted to receive and support a printing plate, the press part being provided with a vacuum chamber and having an aperture which communicates with the vacuum chamber and is exposed at a face of the press part, a printing plate arranged at the face of the press part so that a face of the printing plate is exposed to the aperture, and means for creating a vacuum within the vacuum chamber and in the aperture, the printing plate being provided at the point where the printing plate contacts with the press part with means for distributing vacuum throughout substantially the entire area of the inner face of the printing plate.

2,060,270. JOGGER FOR A PRINTING PRESS. Henry Bosworth Willats and Leo A. Alvarez, San Francisco, Calif. Application March 11, 1935, Serial No. 10,484. 7 Claims. (Cl. 271—89.)

1. A jogger for a printing press or the like comprising a base, a jogging element mounted thereon with freedom of jogging movement, a rod slidable in the base and connected to the element and having spring means for urging the same in one direction, a transverse bar slidable in the base and having a driving means urging the rod in the opposite direction when the bar is moved, and an actuating member reciprocable transversely to the bar and having means for imparting endwise movement to the bar on each reciprocation, the spring means operating through the driving means to immediately return the bar to an initial position.

2,060,331. TRANSFER BOARD FOR VERTICAL PRESSES. William F. Matthews. La Fayette, Ind. Application March 19, 1934, Serial No. 716,253. 8 Claims. (Cl. 271—60.)

1. For use in connection with a printing press embodying sheet-forwarding means, vertically-reciprocable impression means, and sheet-supply supporting means laterally spaced therefrom; a perforated vertically-reciprocable tilting transfer board interposed between the sheet forwarding means and the impression means, the upper face of the transfer board carrying an upward projection having a plane portion facing and parallel with the delivery edge of the board and spaceable therefrom to form an abutment engageable by the trailing edge of a sheet deposited on the transfer board, and the plane portion being surmounted by a tapered portion.

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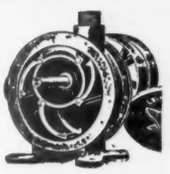

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Type Metals

(Continued from Page 43)

As shown in Table II, pure antimony expands slightly on solidification and pure bismuth expands considerably, but all the type metals studied, and lead and tin, contract.

Honda and Kikuchi[4] also determined the contraction of the metal from the moment of solidification down to room temperature. Their results are given in Table III.

TABLE III. CONTRACTION OF TYPE-METALS ON SOLIDIFICATION AND ON SUBSEQUENT COOLING TO ROOM TEMPERATURE (4)

Metal	Contraction on Solidification %	Contraction on Subsequent Cooling to Room Temp. %	Total Contraction %
Aluminum	6.3	5.4	11.7
Tin	2.8	3.8	6.6
Lead	3.4	3.0	6.0
Antimony	− .9	2.0	1.1
Bismuth	−3.3	1.0	−2.3
Type Metal Alloy 50 lead, 25 antimony, 25 tin	1.2	1.8	3.0

THE ZINC-ALUMINUM ALLOYS

The advantages of the lead-antimony-tin type metal alloys will be well illustrated by brief mention of another series of alloys, namely the zinc-aluminum alloys.

While the hardness and ductility of the type-metal alloys are on the whole very satisfactory, they leave something to be desired for some purposes. In stereotyping, for example, a considerably stronger, harder, and at the same time more ductile alloy than can possibly be obtained from ordinary type metal alloys, would be a decided improvement. The use of the zinc-aluminum alloys has, therefore been suggested[5], These are alloys of zinc with about 6 per cent aluminum; about 1 per cent of copper may also be added.

Such alloys have about 4 to 5 times the hardness of ordinary stereotype metal and are at the same time tougher and more ductile. Their melting point, about 725 deg. F, is about 225 deg. F. higher than stereotype metal. Although stereotype paper mats can be made to withstand the casting temperature of about 835 deg. F required with the zinc-aluminum alloys, there are also other difficulties, however. As is indicated by Tables II and III the contraction of these alloys on solidification

4—Honda, K. and R. Kikuchi. On the Measurement of the Shrinkage of Castings by Means of an Extensometer. Science Reports of the Tohoku Imp. U. First Series Vol. 21, 1932, pages 575-584.

5—U. S. Patent 1,969,308 New Jersey Zinx Co., 1934. British Patent 434,047 New Jersey Zinc Co., 1935. British Patent 434,301 New Jersey Zinc Co., 1935.

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and on cooling to room temperature is considerably greater than for the ordinary type metals. They do not have sufficient fluidity in the molten state to fill the mold or reproduce fine detail and they tend to crack when cast in thin and irregular shapes, probably due to their greater shrinkage. Efforts are still being made to overcome these difficulties but the use of the zinc-aluminum alloys has not as yet become practical.

NEW M.L.Co. MATRIX FACES

The Mergenthaler Linotype Company announces that many sizes of Memphis Medium are now available. Memphis Medium with Italic or with Memphis Bold may now be had in the 6, 8, 9, 10, 12 and 14

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point sizes. Memphis Medium is also available in the 18, 24 and 30 point sizes, as also is 18 point Memphis Medium Italic.

Linotype Paragon, one of the newer members of the Linotype Legibility Group for newspapers, is now available in combination with

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$127,398 NET FOR R. HOE & CO.

There was a net consolidated profit in the operations of R. Hoe & Co. for the fiscal year ended September 30, 1936 of $127,398 after interest charges and before income tax as against a deficit of $486,293 before interest charges and net loss of $650,753 in the preceding fiscal year.

For the twelve months ended September 30 a combined total of $6,245,643 of orders was obtained by the New York and London companies, representing an increase of approximately $1,872,278 over 1935, and the largest volume of sales for any year since 1929-30. Unfilled orders as of September 30 were about $1,000,000 larger than on the same date last year.

A letter to be sent with copies of the annual report to all security holders states in part: "The company's consolidated financial condition continues to be satisfactory . . . the current assets show a ratio of more than 4 to 1 to current liabilities.

"The volume of newsprint consumption in the United States is running at the highest rate experienced in the last six years. Newspaper and magazine advertising lineage have shown a steadily rising trend during the last several years. The widespread demand for additions and replacements in newspaper and magazine printing plants and equipment reflect not only the need for larger, higher speed production, but likewise, the obsolescence which has been brought about by recent improvements in this field and the current development of daily multicolor printing."

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A new 24-page standard Duplex Tubular Press has been installed in the plant of the *News-Journal* Company, Inc., Pensacola, Fla. The press is equipped with an auxiliary former for delivering the product in two sections. A complete set of Tubular stereotype equipment has been installed in the same plant.

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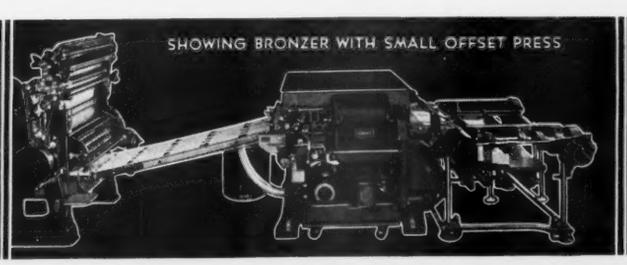
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Mixing Inks for Color

(Continued from Page 28)

In mixing inks for use on white paper it helps to place a sheet of white paper beneath the mixing slab. If the job goes on colored paper, a sheet of the latter may be substituted for the white sheet in trying out the mixture.

When mixing transparent inks for use on white paper it must be remembered that the paper adds white to the mixture but on colored paper there is a mixture of the color of the paper and the color of the transparent ink. Thus red ink on yellow paper appears orange and on blue paper appears violet.

Light colors appear brighter on white paper if run close to color. Light colors appear brighter on paper lighter than the ink if run close to color, as red ink on yellow paper.

TYPE LEGIBILITY CAN BE MEASURED

Newspaper body type legibility has been the object of much concern on the part of newspaper publishers and mechanical executives for some time. Now it is possible to express in percentage terms the improved legibility of the new faces over the old.

A "visibility meter" developed for lighting research work was used recently for measuring newspaper type legibility by Dr. Matthew Luckiesh of the General Electric Company's Nela Park Laboratories, Cleveland. The test was initiated by a public service company's lighting engineer, of Springfield, Ill., who became interested in the subject of newspaper type legibility as the result of an article in the Illinois *State Journal* which announced that newspaper's installation of Intertype Regel news type. The new face was found to have 15.5 per cent greater visibility than the old face.

According to the *State Journal*, the Luckiesh-Moss visibility meter, with which the test was made, is the only device of its kind in the world. It was developed by Dr. Luckiesh and his assistant, Frank Moss, to provide a standard and accurate means of measuring visibility of lighting requirements. The meter is held before the eyes in the same position as a pair of eyeglasses. The observer, looking through it at the specimen of type to be studied, sees the type through two colorless photographic filters which are in approximately the same position as the lenses on a pair of glasses. These filters, however, can be rotated. They are divided into precisely graded sections of density, each section filtering out a little more light than the previous one and thus making the type a little more difficult to read.

The observer starts with the meter set at a point where he can read the type easily. Then he slowly rotates the filter until he finally reaches a point where he can no longer read the specimen of type. Applying the same test to a second type face, the difference in visibility or ease of reading between the two types can with a little figuring be expressed numerically.

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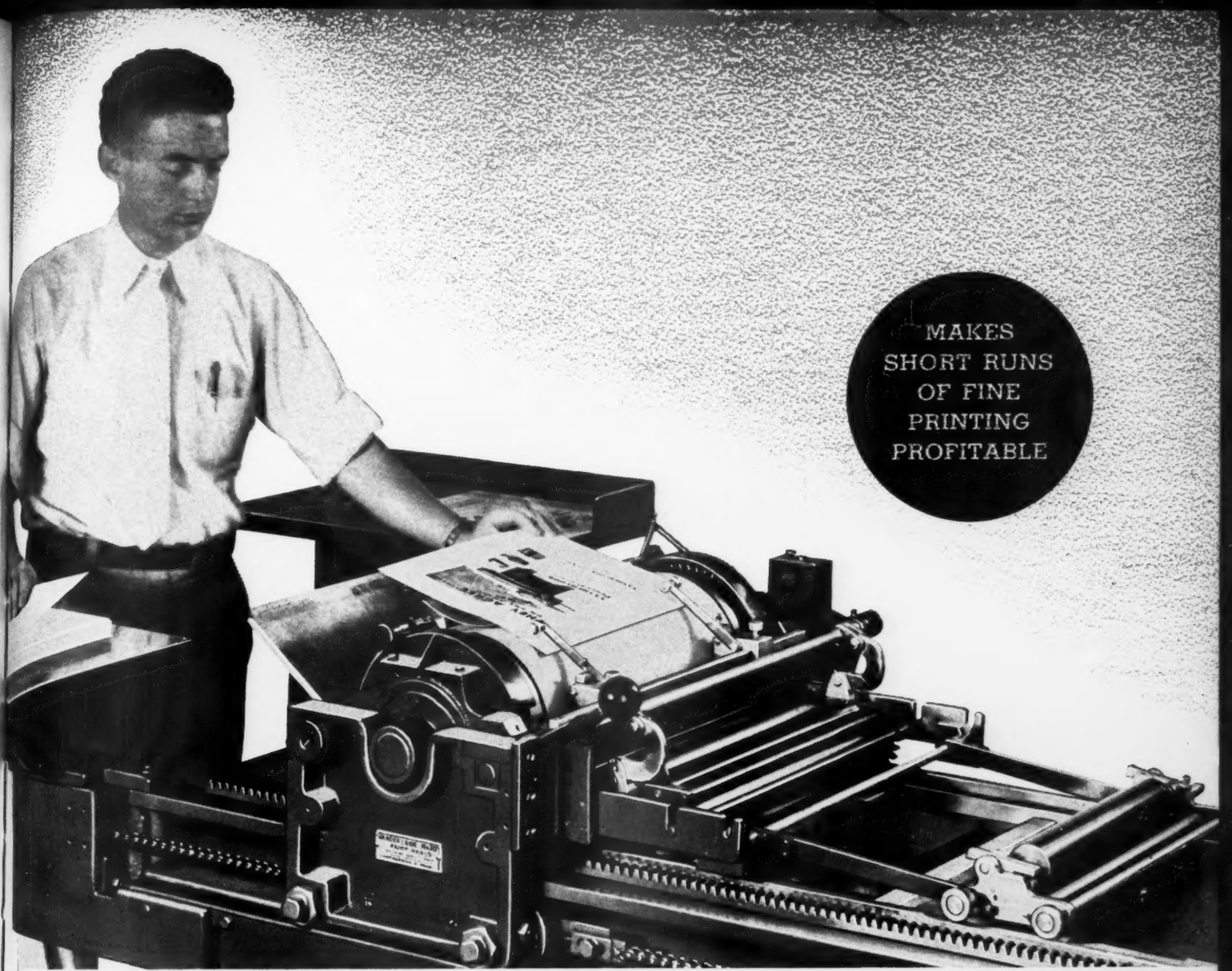

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